CONSTRUCTION NEWS

PERSONALS, ENGINEERING SOCIETIES, INDUSTRIAL NOTES, TRADE PUBLICATIONS.

Supplement to ENGINEERING NEWS. Thursday, March 19, 1903.

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PERSONAL.

Mr. Willard T. Sanborn has resigned as Superintendent of Water-Works of Dover, N. H.

Mr. M. W. Sellers has been appointed General Superintendent of the Coahuila & Pacific Ry., with headquarters at Saltillo, Mex., succeeding Mr. J. D. Melville.

Mr. F. L. Fuller has resigned as General Manager and Assistant to the President of the United Power & Transportation Co., of Philadelphia, Pa.

Mr. J. I. Boggs has been appointed Engineer of the Arkansas Southwestern Ry., with headquarters at Gurdon, Ark., succeeding Mr. N. S. Woods.

Mr. E. H. Holden has been appointed Division Superintendent of the Missouri Pacific Ry. at Concordia, Kan., succeeding Mr. J. F. Simms transferred.

Justice Armour, of the Supreme Court of Canada, and Sir Louis Jette, of Quebec, have been named by the Canadian Government as Alaskan Boundary Commissioners.

Mr. J. Munday has been appointed Superintendent of Telegraph of the Colorado & Southern Ry., with headquarters at Pueblo, Colo., succeeding Mr. F. E. Clary, resigned.

Mr. Guy W. Buxton, who has been for some time connected with the New York office of the H. W. Johns-Manville Co., has recently been appointed Auditor of that company.

Mr. Newton C. Bond, Architect and Engineer, and Mr. J. H. Emigh, Civil Engineer, have formed a partnership and have opened offices in the new Dowlin block in North Adams, Mass.

Mr. F. N. Hibbits, Mechanical Engineer of the Union Pacific Ry., has been appointed Assistant Superintendent of Motive Power and Machinery of that road, with office at Omaha, Neb.

Mr. Coleman Sellers, Consulting Engineer, with office in the Stephen Girard Building, Philadelphia, Pa., has admitted Mr. S. Howard Rippey to an interest in his general office practice.

Mr. E. S. Farwell has opened an office as Consulting Engineer at 309 Broadway, New York. Mr. Farwell has been Steam Engineer with the International Paper Co. since its organization.

Mr. Curtiss Millard, of Springfield, Ill., has been elected President and General Manager of the Peoria & Pekin Union Ry. Mr. Millard was formerly General Manager of the Chicago, Peoria & St. Louis R. R.

Mayor Low drove the first spike in the underground railway in New York city on March 14. The ceremony was attended by the heads of city departments, Rapid Transit Commissioners, tunnel engineers and others.

The directors of the Peoria & Pekin Union Ry., of Peoria, Ill., have elected their officers as follows: Mr. Curtiss Millard, President and General Manager; Mr. H. K. Pinkney, Secretary, and Mr. J. F. Kiefer, Treasurer.

Mr. Arthur W. Trenholm has been appointed General Manager of the Chicago, St. Paul, Minneapolis & Omaha Ry., succeeding the late Walter A. Scott. Mr. Wallace W. Winter succeeds Mr. Trenholm as General Superintendent.

Mr. Clarke P. Collins, of the firm of Collins, Grazier & Smith, Civil and Mining Engineers, Johnstown, N. Y., has resigned as Chief Engineer to the Somerset Coal Co., to accept a similar one with D. B. Limmerman, who owns and operates a large coal field in the vicinity of Somerset, Pa.

Mr. Charles M. Schwab, President of the United States Steel Corporation, returned from Europe on March 17 on board the steamship "Kronprinz Wilhelm." Mr. Schwab has been on a vacation for the past six months in an endeavor to regain his health, which was badly shattered by his business duties, and has quite recovered during his stay.

Mr. T. A. Peabody has been appointed Signal Engineer of the Chicago & Northwestern Ry., with offices at Chicago. For signaling work the road has been divided into four divisions, each in charge of a supervisor of signals, who will report to the signal engineer. The supervisors are as follows: Charles Geary, Henry J. Hovey, Harry S. Towle and W. R. Young.

Mr. E. G. Cowdery, General Manager of the Milwaukee Gas Light Co., has been transferred to St. Louis, Mo., where he will have charge of the Laclede Gas Light Co. He will retain his position as Vice-President of the Milwaukee Gas Light Co., but will be succeeded as General Manager of that company by Mr. E. G. Pratt, at present General Manager of the gas plant at Des Moines, Ia.

Mr. A. B. Gilbert, formerly Assistant Business Manager of the Engineering News Publishing Co., and for 11 years connected with that company, has recently been made Treasurer of the Engineering Agency, Inc., of Chicago. Mr. F. A. Peckham, President of that agency, was for 12 years associated with the first-named company. The offices of the Engineering Agency, Inc., are in the Monadnock Block.

Mr. Harry A. Storrs, for several years U. S. Assistant Engineer on electrical work at New London, Conn., has resigned that position and accepted one with the U. S. Geological Survey. He will have charge of electrical developments in connection with the arid land reclamation work just being entered upon by the U. S. Government. It is expected that a number of dams, to provide large storage reservoirs, will be built, and that temporary dams will be erected and electrical power developed for use in the construction of the permanent dams, and subsequently to pump water to tracts that cannot be irrigated by gravity flow. Mr. Storrs was Professor of Electrical Engineering at the University of Vermont from 1890 to 1899; he graduated from the civil engineering course of that institution in 1882. For the present Mr. Storrs may be addressed in care of the U. S. Geological Survey, Washington, D. C.

OBITUARY.

Mr. Eli S. Quintard, formerly Superintendent of the New Haven & Derby R. R., died at New Haven, Conn., last week, aged 86 years.

Mr. McLeod W. Thomson, Chief Engineer of Maintenance of Way of the Pennsylvania R. R., died at his home in Altoona, Pa., on March 11, of apoplexy. He was 59 years of age.

Mr. Denis A. Shanahan, of Louisville, Ky., died of rheumatism of the heart in Philadelphia, Pa., on March 7. He was a member of the firm of D. Shanahan & Sons, Civil Engineers and Contractors. He was born in Covington, Va., 44 years ago, and was a graduate of Georgetown College, Georgetown, D. C., and the University of Virginia.

Capt. Isaac B. Potts, a retired mechanical engineer, died at his home in Columbus, O., on March 5. Capt. Potts took an active interest in city works and is largely responsible for the present water-works system in Columbus. He was at one time a member of the water-works board and later President of the City Council. He designed and built the Granville water-works, and superintended the planning and erection of other works in various parts of the state. Capt. Potts won his military title in the Civil War.

Mr. Edward A. Darling, M. Am. Soc. M. E., Chief Engineer and Superintendent of the Edison Portland Cement Works, at Stewartsville, N. J., died on Sunday, March 15, from injuries received at an explosion at these works two weeks ago. The circumstances in connection with the explosion were briefly noted in our issue of March 5. The explosion occurred in connection with the coal dust fuel plant used to fire the rotary kilns. Half a dozen persons were killed in the explosion and the fire which followed and a number of others were seriously injured, among the latter being Mr. Darling who was badly burned about the head and body. Mr. Darling was born in 1866 and was a younger son of Thomas Darling, Esq., of New York city. He was for several years Superintendent of Buildings and Grounds of Columbia University, and he read a valuable and exhaustive paper on the mechanical equipment of these buildings at the Washington meeting of the American Society of Mechanical Engineers. Three years ago Mr. Darling resigned his position with the University to take charge for Mr. Thos. A. Edison of the construction of a mammoth plant for Portland cement production. A long time was spent in preparatory work and a complete model plant was built at Mr. Edison's Orange, N. J., works, before undertaking the construction of the large plant. This latter was described in our issue of May 29, 1902.

ENGINEERING SOCIETIES.

COMING MEETINGS.

NATIONAL ELECTRIC LIGHT ASSOCIATION.
May 26, 27 and 28. Convention at Chicago, Ill. Secy., James B. Cahoon, 136 Liberty St., New York city.

AMERICAN SOCIETY OF CIVIL ENGINEERS.
June 8. Annual convention at Asheville, N. C. Secy., C. W. Hunt, 220 W. 57th St., New York.

AMERICAN FOUNDRYMEN'S ASSOCIATION.
June 9, 10, 11. Annual convention at Milwaukee, Wis. Secy., Richard Moldenke, P. O. Box 432, New York city.

INTERNATIONAL ASSOCIATION OF CAR ACCOUNTANTS AND CAR SERVICE OFFICERS.
June 17, 18. Annual meeting at Quebec, Canada. Secy., L. G. Corcoran, Buffalo, N. Y.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.
June 22 to 26. Annual convention at Niagara Falls, N. Y. Secy., R. W. Pope, 95 Liberty St., New York.

AMERICAN WATER-WORKS ASSOCIATION.
June 23-26. Annual meeting at Detroit, Mich. Secy., J. M. Diven, Elmira, N. Y.

THE FRANKLIN INSTITUTE.—At the regular weekly meeting, March 19, Dr. Harry C. Jones, of Johns Hopkins University, will read a paper on "What Physical Chemistry Has Done for Chemistry." At the March 26 meeting, Dr. Frank A. Wolff, National Bureau of Standards, will discuss "Modern Methods of Standardizing." "A Study of Alloys Suitable for Bearing Metals," by Mr. G. H. Clamer, will be the paper for the meeting April 2.

ENGINEERS' CLUB OF PHILADELPHIA.—At the next regular meeting, March 21, Mr. Howard W. Du Bois will read a paper on "Reconnaissance Methods of Surveying in Mountainous Districts." At the meeting on March 7 there were 64 members and visitors present. Mr. H. B. Schermerhorn (visitor) read a paper on "The State of the Art" in patent cases. The paper was discussed by Mr. Carl Hering, Professor Richards, Dr. Henry Leffmann, Mr. James Christie and others.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—The Mechanical Section met March 3, and a paper on "Mechanical Stokers," by Mr. Fitts, was read. At the next meeting, April 7, a paper on "Coal Handling Machinery," by Mr. Frank Webster, will be presented.

The Structural Section was organized Feb. 24, with 60 men present. On March 10 another meeting was held, by-laws adopted and the following officers elected: Chairman, J. K. Lyons; Vice-Chairman, Frank Engstrom; Secretary, W. Whited; Directors, Morris Knowles and F. A. McDonald. A discussion on "Highway Bridge Floors" followed. At the next meeting of the Structural Section, March 24, "Pneumatic Caissons" will be discussed.

The topics of future meetings of the Society are: April 21, "Gas," by Mr. Gow; May 19, "Pipe," by Mr. H. M. Wilson, and "Pipe Making Machines," by Mr. Victor Beutner.

NEW YORK ASSOCIATION OF CHIEF ENGINEERS OF BUILDINGS.—The chief engineers of power plants and superintendents of large office and other buildings in New York city are contemplating the organization of a club or association. Mr. H. M. Reynolds, Supt. Park Row Bldg., informs us that the club will have for its object the mutual benefit of members through discussion of papers read by members on the various power appliances used in buildings. It is hoped in this way to bring to the attention of architects and owners of buildings such appliances as have been found in practice to be meritorious, and on the contrary to point out defects in existing plants. The engineers and superintendents of the great modern office buildings and hotels are men of exceptional ability, and an association for the purposes just outlined will work not only for their own benefit but for the improvement of power appliances in building service.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS (Chicago Branch).—The program for the spring season is as follows: March 24 "The Chicago Transportation Problem." This will be a joint meeting of the American Institute of Electrical Engineers and the Western Society of Engineers, at which Mr. Bion J. Arnold will present a resume of his recent report to the City Council. April 7 "High Tension Lines." Papers will be presented as follows: "Mechanical Specifications for a Proposed Standard Insulator Pin," Ralph D. Mershon; "The Testing of Insulators," F. O. Blackwell; "Transposition and Relative Location of Power and Telephone Wires," P. M. Lincoln; "Burning of Wooden Pins on High-Tension Transmission Lines," C. C. Chesney. May 5 "Tendencies of Central Station Development." The following papers will be presented: "Economical and Safe Limits in Size of Central Stations." H. A. Lardner; "Safety Devices in Central Stations and Substations," Philip Torchio; "Multiple versus Independent Operation of Units and Central Stations," Peter Junkersfeld. May 19 "Telephone Evening." A special program of papers and discussions by local telephone experts is being prepared.

NEW ENGLAND WATER-WORKS ASSOCIATION.—The last of the five winter meetings was held at the Hotel Brunswick, Boston, on March 11, 1903, with an attendance of about 80. Five new members were elected. The president announced that the executive committee had de-

cided upon Montreal as the place for holding the annual convention in September, and that Past-Presidents Frank E. Merrill and Horace G. Holden had been appointed a committee with full powers to make all arrangements for it; also that the June field day would be devoted to a visit to Waltham and Newton, and that the same committee, with the addition of George E. Winslow, of Waltham, would have charge.

Mr. George Bowers, M. Am. Soc. C. E., City Engineer of Lowell, read a paper entitled "Underground Water: Suggestions on How to Obtain and Care for It," based upon his experience in obtaining and caring for such a supply in Lowell, which has been in use since 1891. An abstract of this paper is given elsewhere in this issue. Messrs. Edward Atkinson, A. O. Doane and Chas. N. Taylor took part in the discussion of Mr. Bowers' paper.

Mr. John C. Chase, M. Am. Soc. C. E., contributed "A Little Talk About Water Rates." Edward Atkinson, President of the Boston Manufacturers' Mutual Fire Insurance Co., followed with a paper entitled "Fuel: What We Don't Know About It." It consisted mainly of a description of his suggested "mud fuel," which is nothing more than marsh or swamp mud dried and slightly compressed. Mr. Atkinson states frankly that there have been no conclusive tests, but that such tests as have been made have shown that this material has a calorific value greater than hard wood, and about two-thirds that of good soft coal. It seems to be practically identical with the so-called "turf" used so extensively for fuel in Ireland. Mr. F. C. Coffin, M. Am. Soc. C. E., in discussion, remarked that deep mud pockets which had hitherto prevented the adoption of otherwise suitable reservoir sites, on account of the objections of storing water over such a bottom, and the expense of removing the mud, might, if Mr. Atkinson's vision were realized, prove sources of wealth. It would then be possible to dry enough of the mud to supply fuel for pumping for many years; sell the remainder, and with the proceeds to build the waterworks. It would remain only for some one, following the Marconi idea, to go a step further and introduce a pipeless distribution system.

CONSTRUCTION NEWS.

CONDENSED LIST OF CONTRACTS PENDING WITH DATE OF OPENING BIDS

Bids to be opened.	Work.	Place.	See Eng. News.
Mar. 19.	Sidewalks, Chicago, Ill.		Mar. 12
Mar. 19.	Bridge, Seattle, Wash.		Mar. 12
Mar. 19.	Post office, Minneapolis, Minn.		Feb. 19
	Advertised, Eng. News, Feb. 19 and 26.		
Mar. 20.	Portland cement, Brandon, Ont.		Mar. 5
Mar. 20.	Railway work, Charleston, W. Va.		Mar. 12
	Advertised, Eng. News, Mar. 12 and 19.		
Mar. 20.	Life-saving station, Washington, D. C.		Mar. 12
Mar. 20.	Dredging, etc., New York, N. Y.		Mar. 12
Mar. 20.	Garbage collection, Watertown, N. Y.		Mar. 19
Mar. 21.	Brick, Chicago, Ill.		Mar. 19
Mar. 21.	Building, Billings, Mont.		Mar. 19
Mar. 21.	Pipe, Melrose, Mass.		Mar. 12
	Advertised, Engineering News, Mar. 12.		
Mar. 21.	Bridge, Bellaire, O.		Mar. 12
Mar. 21.	Moving piers, etc., Washington, D. C.		Mar. 5
Mar. 21.	Masonry dam, etc., Union, S. C.		Mar. 5
	Advertised, Engineering News, Mar. 5.		
Mar. 23.	Post office, Richmond, Ky.		Feb. 19
	Advertised, Eng. News, Feb. 19 and 26.		
Mar. 23.	Cement, Wheeling, W. Va.		Feb. 26
	Advertised, Eng. News, Feb. 26 to Mar. 26.		
Mar. 23.	Street railway franchise, Somerset, Ky.		Feb. 26
	Advertised, Eng. News, Feb. 26 and Mar. 5.		
Mar. 23.	Paving, Newburgh, N. Y.		Feb. 26
	Advertised, Eng. News, Feb. 26 to Mar. 12.		
Mar. 23.	Paving, Marshall, Mich.		Mar. 12
	Advertised, Eng. News, Mar. 12 and 19.		
Mar. 23.	Water-works, Mt. Pleasant, Tex.		Mar. 12
Mar. 23.	Pipe and castings, Perth Amboy, N. J.		Mar. 12
	Advertised, Eng. News, Mar. 12 and 19.		
Mar. 23.	Steel fireboat, New York, N. Y.		Mar. 12
Mar. 23.	Water pipe, etc., Great Falls, Mont.		Mar. 19
Mar. 23.	Street lighting, Southampton, N. Y.		Mar. 19
Mar. 23.	Bridges (2), Pontiac, Mich.		Mar. 19
Mar. 23.	Power station, Mankato, Minn.		Mar. 19
Mar. 23.	Bridge, New York, N. Y.		Mar. 19
Mar. 23.	Steel, New York, N. Y.		Mar. 19
Mar. 24.	Laying water mains, New York, N. Y.		Mar. 19
Mar. 24.	Pump removal, Camden, N. J.		Mar. 19
Mar. 24.	Sewer, New Britain, Conn.		Mar. 12
	Advertised, Eng. News, Mar. 12 and 19.		
Mar. 24.	Weir (W.-W.), Atlantic City, N. J.		Mar. 12
	Advertised, Eng. News, Mar. 12 and 19.		
Mar. 24.	Pumping engine, Allentown, Pa.		Mar. 12
	Advertised Engineering News, Mar. 12.		
Mar. 24.	Ditch, Rockwell City, Ia.		Mar. 5
Mar. 24.	Steel shapes, Washington, D. C.		Mar. 5
Mar. 25.	Water-works, Lancaster, O.		Mar. 5
Mar. 25.	Bridges, Plymouth, Wis.		Feb. 26
Mar. 25.	Removing jetty, Galveston, Tex.		Feb. 26
	Advertised, Eng. News, Feb. 26 to Mar. 26.		
Mar. 25.	Dredging, New York, N. Y.		Feb. 26
	Advertised, Eng. News, Feb. 26 to Mar. 26.		
Mar. 25.	Paving, Cohoes, N. Y.		Mar. 12
	Advertised, Engineering News, Mar. 12.		
Mar. 25.	Gas plant, Ashton, Ill.		Mar. 19
Mar. 25.	Laying water pipe, etc., Lexington, Mass.		Mar. 19
	Advertised, Engineering News, Mar. 19.		
Mar. 25.	Ditch, Crookston, Minn.		Mar. 19
Mar. 25.	Sewer, Brooklyn, N. Y.		Mar. 19
	Advertised, Engineering News, Mar. 19.		
Mar. 25.	Paving, Meadville, Pa.		Mar. 19
	Advertised, Engineering News, Mar. 19.		
Mar. 25.	Paving, New York, N. Y.		Mar. 19
Mar. 26.	Pipe, etc., Falmouth, Mass.		Mar. 19
Mar. 26.	Bridges, Glenburnie Md.		Mar. 19
Mar. 26.	Water pipe, etc., Falmouth, Mass.		Mar. 19
	Advertised, Engineering News, Mar. 19.		
Mar. 26.	Gymnastic apparatus, New York, N. Y.		Mar. 19
Mar. 26.	Bulkhead, Boston, Mass.		Mar. 19
Mar. 26.	Bridge, New York, N. Y.		Mar. 19
Mar. 26.	Building, Marion, Ind.		Mar. 19
Mar. 26.	Sewer, Fort Monroe, Va.		Mar. 12
Mar. 26.	Sewer, Cincinnati, O.		Mar. 12
Mar. 26.	Bridge, Chatham, Ont.		Feb. 19
Mar. 26.	Sewer, Connersville, Ind.		Mar. 12
	Advertised, Engineering News, Mar. 12.		
Mar. 26.	Light tower, Boston, Mass.		Mar. 5
Mar. 27.	Bridge, Washington, D. C.		Feb. 12
	Advertised, Eng. News, Feb. 12 to Mar. 12.		
Mar. 27.	Power house, Wheeling, W. Va.		Feb. 26
	Advertised, Eng. News, Feb. 26 to Mar. 26.		
Mar. 27.	Pier, New York, N. Y.		Mar. 19
Mar. 27.	Sewer, Troy, N. Y.		Mar. 19
Mar. 28.	Street lighting, Washington, D. C.		Mar. 19
	Advertised, Engineering News, Mar. 19.		
Mar. 28.	Ditch, Delphi, Ind.		Mar. 19
Mar. 28.	Crane scow, Washington, D. C.		Mar. 5
Mar. 28.	Paving, Lakewood, O.		Mar. 12
Mar. 28.	Bridges, Roby, Tex.		Mar. 12
Mar. 28.	Dam, Fort Bayard, New Mex.		Mar. 12
Mar. 30.	Building, Cleveland, O.		Mar. 12
Mar. 30.	Bridge pier, Washington, D. C.		Mar. 5
	Advertised, Eng. News, Mar. 5 to April 2.		
Mar. 30.	Paving, Toledo, O.		Mar. 5
Mar. 30.	Boat, Wheeling, W. Va.		Mar. 5
Mar. 30.	Drains, and sewers, S. Bethlehem, Pa.		Feb. 26
	Advertised, Eng. News, Feb. 26 to Mar. 26.		
Mar. 30.	Electric light plant, Mankato, Minn.		Mar. 19
Mar. 30.	Paving, Columbus, O.		Mar. 19
Mar. 31.	Water-tube boilers, Copenhagen, Denmark.		Mar. 19
Mar. 31.	Road, Toms River, N. J.		Mar. 5
	Advertised Eng. News, Mar. 5 and 12.		
Mar. 31.	Street lighting, Binghamton, N. Y.		Mar. 5
	Advertised Eng. News, Mar. 5 and 12.		
Mar. 31.	Buildings, Alexandria, La.		Mar. 12
Apr. 1.	Building, Dayton, O.		Mar. 12
Apr. 1.	Paving, Dunkirk, N. Y.		Mar. 12
	Advertised, Eng. News, Mar. 12 and 19.		
Apr. 1.	Pier work, Grand Rapids, Mich.		Mar. 12
Apr. 1.	Reservoir work, Clearfield, Va.		Mar. 12
	Advertised, Eng. News, Mar. 12 and 19.		
Apr. 1.	City engineer's position, St. Catharines, Ont.		Mar. 12
Apr. 1.	Bridges (2), Atlantic City, N. J.		Mar. 12
	Advertised, Eng. News, Mar. 12 and 19.		
Apr. 1.	Buildings, Muskegon, Mich.		Mar. 5
Apr. 1.	Water-works franchise, Christiansburg, Va.		Mar. 19
Apr. 1.	Guns, carriages, etc., Washington, D. C.		Mar. 19
Apr. 1.	Building, Charlottestown, P. E. I.		Mar. 19
Apr. 2.	Mooring stones, Portland, Me.		Mar. 19
Apr. 2.	Bridge, Erie, Pa.		Mar. 19
	Advertised, Engineering News, Mar. 19.		
Apr. 2.	Ice breaker, etc., Tompkinsville, N. Y.		Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 2.	Building, Fort Townsend, Wash.		Mar. 19
Apr. 2.	Building, Columbus, O.		Mar. 19
Apr. 2.	River improvement, Philadelphia, Pa.		Mar. 5
	Advertised, Eng. News, Mar. 5 to Apr. 2.		
Apr. 2.	Sewers, Cleveland, O.		Mar. 12
Apr. 2.	Sewer, Cincinnati, O.		Mar. 12
Apr. 2.	Jetty, Washington, Del.		Mar. 12
	Advertised, Eng. News, Mar. 12 to Apr. 2.		
Apr. 3.	Water tower, Joliet, Ill.		Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 4.	Building, Charleston, S. C.		Mar. 12
Apr. 4.	Dredging, Montgomery, Ala.		Mar. 5
	Advertised, Eng. News, Mar. 5 to Apr. 2.		
Apr. 6.	Sewer and paving, Vallejo, Cal.		Feb. 19
Apr. 6.	Sewer, Canton, O.		Mar. 12
Apr. 6.	Building, Minneapolis, Minn.		Mar. 12
	Advertised, Engineering News, Mar. 12.		
Apr. 6.	Roads, Fort Caswell, N. C.		Mar. 12
Apr. 6.	Sewer, Madrid, Ia.		Mar. 12
Apr. 6.	Paving, Fort Rodman, New Bedford, Mass.		Mar. 12
Apr. 6.	Building, Cleveland, O.		Mar. 12
Apr. 6.	Bridge, Holbrook, Ariz.		Mar. 12
Apr. 6.	Pumping engine, Fargo, N. Dak.		Mar. 12
Apr. 6.	Bridge, San Luis Obispo, Cal.		Mar. 19
Apr. 6.	Bridge work, Petrolea, Ont.		Mar. 19
Apr. 6.	Bridge, Raton, N. Mex.		Mar. 19
Apr. 6.	Paving, Fort Riley, Kan.		Mar. 19
Apr. 6.	Buildings, San Francisco, Cal.		Mar. 19
Apr. 6.	Gravel road, Williamsport, Ind.		Mar. 19
Apr. 6.	Building, Eau Claire, Wis.		Mar. 19
Apr. 7.	Bridges (15), Bluffton, Ind.		Mar. 19
Apr. 7.	Water-works, Biloxi, Miss.		Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 7.	Vault fixtures, Buffalo, Minn.		Mar. 19
Apr. 7.	Paving, Celina, O.		Mar. 19
Apr. 7.	Roads, New York, N. Y.		Mar. 19
Apr. 7.	Building, Webster, S. Dak.		Mar. 19
Apr. 7.	Gas holder (foreign), Denmark.		Feb. 26
	Advertised, Eng. News, Feb. 26 to Mar. 19.		
Apr. 8.	Building, Richmond, Ky.		Mar. 12
	Advertised, Engineering News, Mar. 12.		
Apr. 8.	Power house, Los Angeles, Cal.		Mar. 19
Apr. 9.	Building, Kalamazoo, Mich.		Mar. 12
	Advertised, Engineering News, Mar. 12.		
Apr. 9.	Dredging, Mobile, Ala.		Mar. 12
	Advertised, Eng. News, Mar. 12 to Apr. 9.		
Apr. 10.	Water main, New London, Conn.		Mar. 19
Apr. 11.	Breakwater, Petoskey, Mich.		Mar. 19
	Advertised, Eng. News, Mar. 19 to April 9.		
Apr. 11.	Portland cement, Marquette, Mich.		Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 11.	Canal work, Chattanooga, Tenn.		Mar. 5
	Advertised, Eng. News, Mar. 5 to Apr. 2.		
Apr. 13.	Bridges (2), San Bernardino, Cal.		Mar. 19
Apr. 13.	Paving, Toledo, O.		Mar. 19
Apr. 14.	Riprap stone, Virginia.		Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 14.	Railway (Deepwater Ry), Beckley, W. Va.		Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 14.	Bridge work, Columbus, O.		Mar. 19
Apr. 14.	Dredging, Camden Harbor, Me.		Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 15.	Dredging, New York, N. Y.		Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 15.	Building materials, Pineridge, S. Dak.		Mar. 19
Apr. 17.	Dredge, St. Augustine, Fla.		Feb. 19
	Advertised, Feb. 19, Mar. 5, 19, and Apr. 2.		
Apr. 18.	Paving, Findlay, O.		Mar. 19
Apr. 18.	Paving, Evansville, Ind.		Mar. 19
Apr. 20.	Harbor improvements, Jamaica.		Mar. 19
	Advertised, Eng. News, Mar. 19 and 26.		
Apr. 20.	Dredging, New York, N. Y.		Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 21.	Vessel, Chicago, Ill.		Mar. 12
Apr. 22.	Steel lock gates, Nashville, Tenn.		Mar. 19
	Advertised, Eng. News, Mar. 19 to Apr. 16.		
Apr. 25.	Water-works, Reuteria, Spain.		Mar. 19
May 2, '04.	Railway, South Australia.		Feb. 5
May 12.	Pumping engine, Toronto, Ont.		Mar. 19
	Advertised, Eng. News, Mar. 19 to April 9.		
June 13.	Railway materials, Siam.		Feb. 5
Jun. 15.	Breakwater, Manila, P. I.		Mar. 12
	Advertised, Eng. News, Mar. 12 to May 14.		
July 1.	Electric lighting, etc., Rangoon, India.		Feb. 5
No date.	Water tanks, Toronto, Ont.		Feb. 26
	Advertised, Eng. News, Feb. 26 to Mar. 19.		
No date.	Building material, Seven Islands, Que.		Mar. 19
	Advertised, Engineering News, Mar. 19.		

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

RAILWAYS.

ARKANSAS, MISSOURI & KANSAS.—W. D. Spooner, Ch. Engr., has returned to Joplin, Mo., from New York, where he has placed the bonds for the building of the new railway from Chanute, Kan., through Joplin to Memphis, Tenn. The line will be about 400 miles long, and cost approximately $12,000,000. It will open up a large undeveloped mineral country in southern Missouri and northern Arkansas.

ATCHISON, TOPEKA & SANTA FE.—This company has purchased the Eureka & Eel River R. R. and the California Northern extension of this road, known as the Midland road. Surveys are being made for the corresponding extension of the Eureka & Eel River road and the Midland in a southerly direction.

ATLANTIC COAST LINE.—The line from Punta Gorda to Fort Myers, Fla., will be known as the Fort Myers extension, and will run through 28 miles of wooded land. T. S. Tutwiler is Asst. Ch. Engr., Savannah, Ga.

BALTIMORE & OHIO.—L. F. Loree, Pres., has stated that the extensions and improvements under war and contemplated on the system would cost over $3,000,000, and is quoted in part as follows, regarding the proposed work: "We have decided to erect two new channel spans in the B. & O. bridge at Bellaire, O., and also expect to make a double track connection from the Wheeling bridge to the C. L. & W. line. This improvement will cost about $300,000. The Cleveland, Lorain & Wheeling R. R. will be double tracked from Wheeling to Holiaway, including a new tunnel at Flushing, O., and a yard to accommodate 1,500 cars, at a cost of $2,075,000. On the Pittsburg & Western division the only work this year, outside of that in progress, will be done in the New Castle yards and the completion of the double tracking from New Castle to Youngstown. That will make the line double track from Pittsburg to Youngstown. From Youngstown to Akron the line is being double tracked along the Brice survey, and we expect to have the work completed this summer. The work will cost $400,000. A new passenger station will be erected at Youngstown, across the Mahoning River, about opposite the Pennsylvania station. The plans have not been definitely decided upon. Four surveys have been made for the short-line between Pittsburg and the east, which will shorten the route 65 miles. While nothing has been definitely decided upon, the matter is under consideration."

BIRMINGHAM, COLUMBUS & ST. ANDREWS.—We are informed that actual work on this project, recently chartered in Alabama, will soon be undertaken. The rights of way have already been secured in Florida. The line will run from Birmingham in Columbus, Eufaula and Dothan, Ala., and Chipley, Fla., on to St. Andrews, some 300 miles in all. W. M. Gordon is Pres., Columbus, Ga.

BROOME COUNTY R. R.—This company has been incorporated in New York, with $450,000 capital stock, to operate a steam road, 15 miles long, from Vestal to Binghamton. Albert B. Walters and R. E. Donaughey, of Wilkesbarre, Pa.; Ed. J. Bond, Baltimore, and D. E. Baxter, New York, are among the directors.

BRUNSWICK & BIRMINGHAM.—Reports state that this company has purchased the Ocilla & Irwinville R. R., extending from Ocilla, Ga., to Irwinville, Ga., 10 miles, the purchase being made from the Ensign-Oskamp Lumber Co. The Brunswick & Birmingham is now completing a connection from Wrays to Ocilla, which will enable it to make the Ocilla & Irwinville road part of its main line. It is further reported that the company will complete a connection from Irwinville to the Georgia Southern & Florida Ry. in about 90 days, and that the road will then be pushed west via Leesburg and Dawson to Eufaula, Ala., from which point it will go to Birmingham, Ala. L. W. Robert is Ch. Engr., Brunswick, Ga.

BUFFALO & NIAGARA TERMINAL R. R.—Incorporated in New York with $450,000 capital stock to operate a steam road, 45 miles long, from Niagara Falls, passing through Tonawanda to Buffalo and with a branch from a point on the Niagara River, near Buffalo, to Depew. Joseph E. Mayer, New York; James N. Adam, A. J. Wheeler and C. D. Marshall, of Buffalo, are directors.

BUFFALO, ROCHESTER, & PITTSBURG.—F. H. Clement & Co., Philadelphia, have been awarded a contract for 27 miles of good work on this road in Indiana county, Pa. They will do some work themselves and will sublet portions. There will be some scraper, cart and small car work and they expect to pay good prices. Address 22 South Broad St.

CANADIAN NORTHERN.—D. D. Mann, Vice-Pres., Toronto, Ont., states that the Winnipeg, Man., station and terminal improvements projected by the company on the property just purchased from the Hudson Bay Co., will involve an expenditure of $1,500,000, and will require three years for completion.

CHICAGO, BURLINGTON & QUINCY.—Arrangements are being made by this company for constructing an extension from Sioux City, Ia., to Ashland, Neb., which will be 100 miles in length and give connection with the Great Northern.

CINCINNATI, BLUFFTON & CHICAGO.—This company has been incorporated in Indiana to build from Huntington through Bluffton, Pennville, Portland and Union City, and from Pennville to Muncie, having a total length of 90 miles. The capital stock is $100,000. S. H. Bracey, John Traise, W. B. Blackburn and C. D. Waterbury are directors.

CONTINENTAL RY.—The northern terminus of this projected road will be at Norwood, on the southern boundary of Lake of the Woods, Man., and run through Minnesota, Iowa, Missouri, terminating at Kansas City. The company is arranging to build part of its line in Southern Minnesota at an early date. Wm. T. Smith is Pres. and M. P. Givens, Secy., Clapp Block, Des Moines, Ia.

DALLAS TERMINAL RY.—At the meeting of the stockholders of the Dallas Terminal Ry. & Union Depot Co. (St. Louis Southwestern property) the issuance of $2,000,000 in bonds was authorized. W. C. Connor, Pres., states that the money will be used for enlarging the terminal lines, Dallas, Tex.

DEEPWATER RY.—Bids are wanted by this company until April 14 for the graduation, including tunnels, trestle work and masonry on 35 miles of road in Wyoming and Mercer counties, W. Va., as stated in our advertising columns. C. P. Howard, Engr. in Charge, Beckley, W. Va.

DEL NORTE & HUMBOLDT.—This company has been incorporated with $2,500,000 capital stock, to construct a railway from Eureka to Crescent City, a distance of 100 miles. Five branches will be built, one eight miles long along Hunter Creek, one up-stream on both sides of the Klamath River, 10 miles long, up Little River for a distance of eight miles, along Redwood Creek, a distance of 12 miles, and another up Mad River for 15 miles. Hiram C. Smith, Pres. Pacific Lumber Co.; Josiah Bell and C. P. Soule are incorporators, probably of Eureka, Cal.

GREAT NORTHERN.—Two surveys are reported to have been made along the California and Oregon coast between Portland, Ore., and San Francisco, Cal., in the

interest of this company. One party worked north from Marion county, and the other southward from Portland, Ore. Both routes surveyed are shorter than the Shasta Route of the Southern Pacific, one by 120 miles and the other by 140 miles. Jas. J. Hill is Pres., St. Paul, Minn.

FLORIDA SOUTHEASTERN.—This line will be about 300 miles long, and run from Tallahassee, Fla., to Tampa. J. O. Hatch, Secy., Savannah, Ga., writes that the preliminary surveys have not yet been started.

GREAT NORTHERN.—Contracts are reported to have been let as follows for the proposed Jennings cut-off in Montana: Garret Smith, 12 miles; Jas. Caughran, five miles; Twohy Bros., seven miles; Winter, Larson & Bloomer, 12 miles; Porter Bros., five miles; Wren & Greenough, 11 miles; S. J. Dahlberg, three miles; Mr. Jones, three miles, and P. Welch, 14 miles. The company is planning to build a road from Argenta up the Duncan River Valley.

HOUSTON, EAST & WEST TEXAS.—It is reported that the company will practically rebuild the line between Houston and Shreveport, Ala., and that work will be started as soon as good weather sets in. Heavier rails will be relaid for the entire distance. A. V. Kellogg is Engr., M. of W., Houston, Tex.

HUMBOLDT R. R.—This road, for which incorporation papers were recently filed in California, is now being surveyed, and gives promise of being built at an early date. It will run from Arcata, tapping the timber belts of northern Humboldt and Del Norte counties and probably go on as far as Grant's Pass, Ore. The incorporators are mostly Eureka, Cal., parties, but the one behind the project is said to be the Santa Fe road.

LA CROSSE & EASTERN.—It was recently reported that a contract for a large portion of the road between La Crosse, Wis., and Viroqua, would soon be let.

LAKE & ERIE.—Articles of agreement of consolidation will soon be filed in Ohio, merging the Richland & Mahoning and the Ashland & Wooster companies, under the above name, with a capital stock of $650,000. The new company will hold charters to complete and construct lines of railway from Sandusky to Bellaire, O., from Mansfield to a point on the east state line in Mahoning county and thence to a point in Stark county. The work of building the line from Sandusky to Beaver and from Akron to Youngstown, will be commenced first. C. W. French is Pres.; V. A. Dehnel, Secy., and F. H. Heywood, Treas.

LIBERTY-WHITE R. R.—J. J. White, Pres., McComb City, Miss., writes that the bids received on March 10 for grading this line, 25 miles long, were not satisfactory, and as the result no award has yet been made.

LOUISIANA R. R.—W. M. Washburn, Ch. Engr., Gibsland, La., writes that on account of bad weather only about 35 miles of the survey has been made from Crowley north. Contracts will be awarded as soon as possible, and Mr. Washburn also states that it is the intention to complete the line during the present year. The road will run from Crowley to Natchitoches, via Oakdale on the Watkins & Gulf Ry., and will be 140 miles in length. Hampton Storey is Pres., Crowley, La.

MASSACHUSETTS.—The Fore River Ship & Engine Co., of Quincy, has petitioned the Norfolk county commissioners for the right to construct a private railroad across certain streets in Quincy and Braintree to be standard gage and nearly two miles long. H. T. Whitman, C. E., Quincy, presented the plans to the commissioners. F. O. Wellington is Gen. Mgr.

MEMPHIS & GULF.—The Cornell Construction Co. has been incorporated at Newark, N. J., with a capital stock of $1,000,000, for the purpose of building this road, which will extend from Memphis, Tenn., to Pensacola, 366 miles. H. H. Cornell, Chas. H. Blair, Chester H. Pond and L. W. Moen are incorporators.

NATCHEZ, URANIA & RUSTON.—Henry E. Hardtner, Pres., Hinton, La., confirms the report that an extension from Hinton to Newport, La., six miles, will be built. The line is now 12 miles long from Urania to Hinton, La.

NEW YORK, ONTARIO & WESTERN.—C. E. Knickerbocker, Engr. M. of W., Middletown, N. Y., writes that contracts have been let as follows on the line from Cornwall to Cadosia: J. M. Murphy & Co., Jersey City, N. J., 10 miles; P. H. Coogan, Schenectady, N. Y., 4½ miles; Crary Construction Co., Binghamton, 6 miles; J. M. Ludington, Rochester, 13 miles; O'Hehrs & Curran, Warwick, N. Y., 12 miles. The preliminary work and information on the next 20 miles of this line will soon be finished and contracts will then be awarded.

PENSACOLA, MERIDIAN & NORTHWESTERN.—This company has been chartered in Mississippi to run from Pensacola to either Water Valley, Winona or Granada in Mississippi, or to Memphis, Tenn. Murray F. Smith, Vicksburg, Miss.; J. A. Lewis, Meridian, Miss., and W. V. Delhaut, St. Louis, Mo., are among the incorporators.

PITTSBURG COAL CO.—It is stated that this company is planning to build a road from the Pittsburg district to the south shore of Lake Erie. W. R. Woodford is Vice-Pres.

RIO GRANDE & SOUTHWESTERN.—E. M. Biggs, Pres., Edith, Colo., writes that the company's engineers are now locating the new line, which will run to Gallina, N. Mex., some 42 miles. Mr. Biggs states that the contract for the first 30 miles, from Lumberton to Choma River, N. Mex., will be let within 30 days (date of communication, March 12). The construction funds are provided for. E. J. Yard is Ch. Engr., Denver, Colo.

ST. LOUIS & NORTHWESTERN.—J. H. P. Baker, Pres., Salisbury, Mo., informs us that the surveys are completed and the rights of way are now being taken on the line from Mokane to Fulton, Columbia, Fayette, Salisbury and Brookfield, some 120 miles, and contracts are to be awarded as soon as the rights of way are secured. I. K. Pearson is Ch. Engr., New York.

ST. MARY'S, SUWANNEE & GULF.—Superintendent Drew of the Suwannee & San Pedro R. R., states that this newly-incorporated road will practically be an extension of the S. & S. R. from a point opposite the town of Fernandina, Fla., where good water frontage and dock facilities can be obtained.

SAN FRANCISCO TERMINAL RY. & FERRY CO.—Representatives of this company and the Stockton & Beckwith Pass Ry. Co. have acquired a freight terminus in San Francisco, Cal., at a cost of $1,000,000. The site is situated on the water lots of the Potrero, extending from the shore line at the Spreckels Sugar Refinery to the north line of Islais creek and comprises some 67 acres of land. Most of the land is under water, and it is estimated that $2,000,000 will be required to fill and improve the site.

SEABOARD AIR LINE.—It is stated that the construction of the new track from Rockmart to Marietta, Ga., will begin at once. The charter of the East & West R. R., recently acquired, has been amended to allow of the construction of this road. W. W. Gwathmey, Jr., is Ch. Engr., Portsmouth, Va.

SELMA & COHABA VALLEY.—We are informed that surveys are made, the line located, rights of way obtained maps, profiles, estimates, etc., completed, and terminals at Selma, Ala., including the river front secured for this road, which will be 90 miles in length, and run from Selma to Centerville, Blockton, Bessemer and Birmingham, Ala. H. L. McKee is Pres., Meridian, Miss.

SOUTHERN CALIFORNIA RY.—This company has been incorporated in California, and is a consolidation of the California Southern, the California Central and the Redwood Beach railroads. The principal place of business is at Los Angeles, Cal. Capital stock, $16,935,000.

WEST VIRGINIA.—George C. Sturgiss and several Morgantown, W. Va., men are forming a company with the intention of building a railway from Morgantown to the Connellsville coke regions.

STREET AND ELECTRIC RAILWAYS.

BANGOR, ME.—An act has been introduced in the legislature for the incorporation of the Lubec & Machias Ry. Co., and provides for a line, steam or electric, from Lubec through the towns of Trescott, Whiting, Cutler, East Machias and Machiasport to Machias. The incorporators are Bion M. Pike, Jacob C. Pike, Robert J. Peacock, Clarence H. Clark and James H. Gray.——Engineers are soon to begin the survey for the electric railway between Belfast and Camden, and it is expected the line will be in operation by Oct. 1. This will give electric communication from Belfast through to Thomaston and Warren.—The projected line from Hampden to Stockton Springs, which will be built this year, will leave a gap of only 12 or 15 miles to be built in order to give through electric service from Bangor to Rockland and the other Knox county towns.——The Fairfield & Shawmut Electric R. R. Co. has been organized at Waterville, with capital stock of $50,000, with A. F. Gerald Fairfield, Pres. The line will run between the points named, and will likely be built this spring.

ATTLEBORO, MASS.—H. M. Daggett, Jr., Attleboro, writes us that it is hoped to build the Attleboro & Mansfield St. Ry. this spring. No contracts have as yet been awarded. Franchises in each of the towns en route, namely, Attleboro, North Attleboro and Mansfield, have been granted, but have not yet been approved by the Railroad Commissioners. The road will be electrically operated, and be 15 miles in length. J. Walter Bradlee is Pres., 23 Court St., Boston, Mass.

HAVERHILL, MASS.—The railroad commissioners having approved the location granted the New Hampshire Traction Co. for its line through Locust and Granite Sts. to the B. & N. depot, work will be started by that company as soon as the necessary supplies can be obtained.

NEW BEDFORD, MASS.—It is planned to build an electric line from Tiverton to Little Compton and Seaconnet Point through Tiverton Four Corners. The promoters are Boston capitalists.——There is a petition before the Rhode Island general assembly for a charter to build a road from Fall River to Adamsville, to continue along Horse Neck bend; also for a line by the same interests from Tiverton to Little Compton and Seaconnet.

SOUTH FRAMINGTON, MASS.—Articles of association have been drawn up by the Framingham & Cochituate St. Ry. Co., capitalized at $50,000, which will build a line four miles long, connecting the points named. F. E. Yeager, Wayland, Chas. A. Coombs, Natick and Abner Jones, South Framingham, are the projectors of the scheme.

ALBANY, N. Y.—The Albany & Hudson Ry. Co. has filed articles of incorporation, with $2,000,000 capital stock to operate the third rail electric line between this city and Hudson. The company has acquired the property and franchises of the Albany & Hudson Ry. & Power Co. H. G. Runkle, C. L. Rossitor and R. A. C. Smith, New York, are directors.

BINGHAMTON, N. Y.—Work on the proposed electric road of the Interstate Traction Co., to run from Goshen to Newburgh, will be started this spring, as soon as Victor K. Mills, surveyor, of Goshen, can lay the route and establish the grades. The road which is capitalized at $300,000 will touch Chester, Greycourt, Blooming and Moodna and New Windsor.

BROOKLYN, N. Y.—Wm. Barclay Parsons, Ch. Engr. Rapid Transit Commission, has reported a plan on rapid transit in Brooklyn, to that body, which embodies the following items: 37 miles of new road and 120 miles of new track, at a cost of about $52,000,000; a second East River tunnel, from Maiden Lane and William St., through Centre St., connecting the Brooklyn, Manhattan and Williamsburg bridges and reaching to Orange and Nassau Sts., Brooklyn, the latter being the terminal grade of the new Manhattan Bridge; a four-track subway from Flatbush and Atlantic Aves. to the Prospect Park Plaza and along Eastern Parkway, and a two-track subway through Flatbush Ave. to East Broadway; a combination subway and elevated line from Flatbush and Atlantic Aves. along Fourth Ave. to Fort Hamilton, with a tunnel connection from Atlantic Ave. to Whitehall St., Manhattan; extra tracks for express trains on the Fulton St., Broadway, Myrtle Ave. and Fifth Ave. lines; an extension of the Fulton St. elevated road to near Hollis, in Queens, and a connection between the Fulton St. and Flatbush Ave. lines in the shopping district; a new elevated line from Franklin Ave. and Fulton St., through Franklin Ave. to Wallabout, Gwinnett and Lorimer Sts. and Manhattan Ave. to Long Island City, with connections for the Williamsburg and Blackwell's Island bridges.

HOOSICK FALLS, N. Y.—Reports from this town state that a plan is being fostered by New York and Boston parties looking to the connection of New York city and Montreal, Que., by trolley by the construction of new lines and connections with existing roads. The specifications will call for about 72 miles of track, and the connections will be made with roads in eastern New York and the Berkshires and various systems in Vermont.

NEW YORK, N. Y.—The Board of Aldermen has granted a franchise to the New York City Interborough Ry. Co. to operate a trolley system on 36 miles of streets in the borough of the Bronx.——It is stated that the New York & Port Chester R. R. Co. expects to begin work in April in the Bronx and connect at 177th St. and Willis Ave. with the subway system. The line will be 21 miles long, extending to the Connecticut line and touching Mt. Vernon, Pelham Manor, Rye, New Rochelle, Harrison and other villages along the New Haven road. There will be a 3-mile branch to the East River at Classon Point. It is said the new system will have four tracks, and that it will ultimately form a part of the interborough system.——The Metropolitan St. Ry. Co. has started work changing the power on the Grand St. line in the city from horse power to electricity. The line extends from river to river.

ATLANTIC CITY, N. J.—The Atlantic City & Suburban Traction Co. is constructing a suburban electric railway extending from the Board Walk at Atlantic City to Pleasantville, N. J., from which place the road will branch in two directions, one leading to Absecon and the other to Somer's Point, a total distance of approximately 18 miles. This road will operate 12 cars, each being equipped with four Westinghouse 12-A motors and five trail cars. The following electrical apparatus is also to be installed in the power house at Pleasantville: Two 400-KW. direct-current Westinghouse railway generators, running at 550 volts and 125 r. p. m., together with a switchboard, which will be of the standard Westinghouse railway type and consist of two generator panels, one load panel and four double feeder panels.

NEW BRUNSWICK, N. J.—It has been announced that the lines of the Middlesex & Somerset Traction Co. will be extended from Metuchen to Plainfield. Ed. H. Radel, Supt., states that work will be started as soon as the consents can be secured from the township committee.

VAILSBURG, N. J.—The Essex Cross Ry. Co. has obtained a franchise to operate in Vailsburg. Francis M. Eppley is Pres.

LANCASTER, PA.—John E. Snyder writes that the capital for constructing the Hummelstown & Campbellstown St. Ry. is provided for, but nothing has been done in the matter of securing rights of way and making surveys. The line will run from Hummelstown to Hockersville and Campbellstown, with a branch to Derry Church, a total of eight miles. Electricity will be used as motive power. M. S. Hershey, Lancaster, is Pres.

LOCKHAVEN, PA.—A charter has been granted to the Riverside St. Ry. Co., of Lockhaven, for a line from this place to Oak Grove and probably to Pine Creek. M. B. and C. H. Rich and T. M. Stevenson and associates are interested.

WASHINGTON, D. C.—It is reported understood that arrangements have been concluded for securing in this city the funds for building the electric road from the Georgetown end of the Aqueduct bridge to Great Falls, and as soon as the details are completed the work of building will be begun. The route has been surveyed. It is planned to erect a power house on a site near the Virginia end of the Aqueduct bridge. The total cost will amount to about $400,000. The line will be 14 miles long.

NEW MARTINSVILLE, W. VA.—Robt. Miller, Gen. Mgr. New Martinsville, Sistersville & Middlebourne Electric Ry. Co., has completed arrangements for beginning work on the electric road from this city to Sistersville, and will start surveys at once and actual work within two months.

PARKERSVILLE, W. VA.—V. B. Archer, one of the incorporators of the Parkersburg & Ohio Valley Electric Ry. Co., states that his company has been financed to the extent of $1,500,000 and will build from Williamstown to Moundsville, making the line almost continuous from Parkersburg to Pittsburg.

PIEDMONT, W. VA.—Reports state that arrangements have been made for the construction of a trolley line from Greencastle to the top of the Blue Ridge Mts. at Pen Mar on the Western Maryland R. R., and that W. A. MacDonald, of Philadelphia, has been awarded the contract for the work at $300,000.

ATHENS, GA.—Reports state that Chas. H. Lennon, representing an Ohio syndicate, has been interesting Southern capitalists and local authorities at Athens in an electric railway project, which calls for a line connecting Atlanta, Decatur, Monroe, Watkinsville, Athens, Lexington, Washington and Augusta, and has secured figures, plans and estimates for the electric equipment from the Westinghouse, Church, Kerr Co. for the work.

AUGUSTA, GA.—James U. Jackson, Pres. Augusta-Aiken Ry. & Electric Co., is reported to be securing estimates from the General Electric Co. in New York for equipping a line of railway between Augusta and Columbia, S. C., extending from Aiken. The Augusta & Columbia Electric Ry. has applied for a charter for this line, which will be some 50 miles in length. The capital stock is placed at not less than $500 and not more than $20,000. James U. Jackson, Augusta; W. B. Smith Whaley, Columbia, and Henry Buist, Charleston, are incorporators.——President Bemis, of the Macon Ry. & Lighting Co., is also said to be securing figures from the General Electric Co. for the new electrical equipment and for extension of its lines.

SHEFFIELD, ALA.—The Sheffield Co., with a capital stock of $500,000, has been incorporated and will build and operate an electric street railway between Sheffield, Florence and Tuscumbia, and build water-works, electric light plants, etc. It is reported that work will be started at once. Henry Parsons, Pres.; J. W. Worthington, Vice-Pres., Sheffield, and L. H. McIntyre, Gen. Mgr., Philadelphia, Pa. The company will have offices in Sheffield and New York.

SCRANTON, MISS.—Samuel Young, of the Moss Pt. & Pascagoula R. R., Scranton, Miss., writes us that his company is about to build a standard gage electric railway. It will be used for freight as well as for passengers. Information as to running freight cars on street railway tracks, etc., is wanted.

CHATTANOOGA, TENN.—Plans are being prepared for the line of the Chattanooga Electric Ry. to Chickamauga Park, the surveys having been completed. The distance is about 9½ miles. Engineer McFarland drew the plans.

NEW DECATUR, IND.—The council is now considering the question of granting an electric street railway franchise to W. R. Hall, of Selma, Ala., and associates. The applicants state that work will be started at once if favorable action is taken.

COLUMBIA, KY.—Granbery Jackson, of the engineering firm of Jackson & Omberg, Memphis, Tenn., who has gone over the survey of the proposed electric road between this place and Campbellsville, has estimated the cost of construction and equipment at $300,000.

LOUISVILLE, KY.—Local papers state that work will begin within a few weeks on the interurban line to Jeffersontown. The survey has been accepted and nearly all the right of way secured. It is said that the line will surely be running by fall.——Peyton N. Clarke, who has been promoting the Mt. Washington electric line announces that details of plans will soon be ready.——The Louisville & Eastern Electric Ry. will soon begin work on the extension to Shelbyville. The survey has been completed some time.

CLEVELAND, O.—Reports from Cleveland state that work on the Mansfield & Ashland line will be started immediately, and at the same time the Western Ohio Traction Co. will begin extension from Sidney to Findlay.——The Cleveland & Southwestern Ry. will start work within 30 days on the line from Medina to Worcester. This road will take in Chippewa Lake and be ready for operation by next fall.——The Eastern Ohio Traction Co. plans extensive repairs to its property during the coming season, and will also build some new lines, the filling of the gap between the Mahoning Valley Ry. and the Chagrin Falls Ry. being a probability. Clark Ford is Pres.

DAYTON, O.—It is stated that the Dayton, Springfield & Urbana Traction Co. will make financial arrangements for building a double-track road between this city and Springfield.

MARIETTA, O.—The Muskingum Valley St. R. R. Co. has been incorporated with $10,000 capital stock, to build a line up the Muskingum Valley. A surveying corps has

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been put in the field and is now locating the route. The incorporators are B. G. Dawes, D. C. Gebhart and L. P. Fleming, of Marietta.

MARYSVILLE, O.—The electric railway building between Delaware and Magnet Springs, Union county, has been incorporated under the name of the Delaware & Magnet Springs Electric Ry. Co., with $200,000 capital stock.

SPRINGFIELD, O.—J. S. Horshman, Pres. Kenton & Southern Ry. Co., writes that the contract for building the company's line from Kenton to Bellefontaine has been let to the Great Northern Construction Co. Surveys are now being made. The construction capital is secured. C. A. Aldeman is Ch. Engr., Springfield.

GOSHEN, IND.—The Fort Wayne & Goshen Ry. Co., incorporated a short time ago, is said to have just completed plans for the complete building and installation of its road, which will have a mileage, including sidings, of 65 miles. The road is practically a continuation or extension of the Indiana Railway Co., of South Bend, which runs from South Bend through Mishawaka, Elkhart, Osceola, Dunlap to Goshen. The company is capitalized at $2,000,000, and expects to begin operations within 12 months. Arthur S. Partride and James F. Rothwell, Goshen; Geo. W. Miles, Syracuse, and Chas. S. Bash, Fort Wayne, are interested.

GREENCASTLE, IND.—A franchise has been granted to J. G. Benson and J. N. Holstead, of Brazil, for the construction of an electric railway in this town which will form the connecting link of the proposed electric road from Indianapolis to Terre Haute and to St. Louis, Mo. The parties named are said to be working in the interest of the Stone & Webster syndicate.

INDIANAPOLIS, IND.—Edward Hawkins, Pres. Consolidated Traction Co., states that contracts will be let within a few days, and work will be started on the proposed line from this city to Crawfordsville as soon as the frost leaves the ground.

MARION, IND.—The Kokomo, Converse & Marion Traction Co. has filed a bond of $10,000 with the city as a guarantee that the road will be built within 18 months. The company proposes building an electric road extending from Marion to Kokomo, with a branch line to Converse. O. V. Darby and T. C. Reynolds, Kokomo; H. D. Thomas, Marion, and George J. Marratt, Indianapolis, are interested.

MONMOUTH, ILL.—The Illinois Electric Ry. Co. has been incorporated with a capital stock of $10,000 to build a line from this city to Aledo and Rock Island, with a line running to Gaiesburg, having a total mileage of 65 miles. John S. Brown is Pres. and Robt. P. McGeehan, Vice-Pres. and Gen. Mgr.

SHEBOYGAN, WIS.—S. Wesselius, Grand Rapids, Mich., financial agent of the Sheboygan Light, Power & Ry. Co., is in this city making a proposition to the city in regard to improving its street railway service and building the extension to Plymouth, expending about $500,000 in the work.

DES MOINES, IA.—The Manning & Kimballton Ry. is the name of the company which proposes building the 20-mile electric line passing through Manning, Kimballton and Fiscus. The company is capitalized at $50,000 and will start work soon.

MARSHALLTOWN, IA.—A. G. Glick, Pres. Manhattan Electric St. Interurban Ry., informs us that the company is now securing its franchises and has not yet completed its preliminary work.

LINCOLN, NEB.—Articles of incorporation have been filed by the Omaha, Lincoln & Beatrice Ry. Co., capitalized at $2,000,000, to build an electric railway through Douglas, Sarpy, Cass, Saunders, Lancaster and Dodge counties. Elbert C. Hurd H. H. Wilson and Wm. Shankland are incorporators.

BEAUMONT, TEX.—H. J. Hopkins, Pres. Beaumont & Port Arthur Electric Ry. Co., has recently returned from New York, where he has made financial arrangements for the immediate construction of the line. The power plant will be situated at Nederland, midway between Beaumont and Port Arthur, which towns are 25 miles apart.

HOQUIAM, WASH.—The council has granted a franchise to the Grays Harbor Power & Light Co. to build an electric car line. The franchise is for a period of 50 years. The promoters expect to begin work immediately.

SEATTLE, WASH.—John Noyes, of Butte, Mont., and Fred E. Sander, of Seattle, have applied for franchises to construct and operate electric street railways in this city.

SPOKANE, WASH.—A franchise has been granted to the Moran Transportation Co. for the construction of two street car lines through the southeastern part of town to Moran prairie. The line will be 10 miles long.

VANCOUVER, WASH.—An ordinance has been introduced in the council granting a franchise for construction of street car lines in Vancouver to J. H. Elwell, O. C. McLeod and J. E. Lancaster. These parties also asked for franchise to install a gas plant for fuel and lighting purposes.

WHATCOM, WASH.—The Lynden Electric Railway & Improvement Co. has been incorporated with $160,000 capital stock by Chas. A. Wyatt, C. T. Liking and G. H. Butters, and will construct and operate electric railways in Whatcom county.

EUGENE, ORE.—F. N. Nightswander, of Glenada, will soon proceed to organize a stock company to build an electric road to connect Glenada with Eugene. The line will also extend to Gardner and Coos Bay from Glenada.

EUREKA, CAL.—George Henderson, of Oakland, who was awarded the franchise for an electric road in Eureka, must commence work on the road within two months.

FRESNO, CAL.—S. N. Griffith is about to make another application to the supervisors for a franchise for its proposed road to Clovis.

LOS ANGELES, CAL.—Bids will be received up to April 13 by H. J. Lelande, Cy. Clk., for the sale of a street railway franchise in this city.——H. W. Magee, attorney for the Campbell-Johnston Electric Ry. deals, states that the road will surely be opened by September next.

SAN FRANCISCO, CAL.—Articles of incorporation have been filed by the South San Francisco R. R. & Power Co., with $100,000 capital stock, to build an electric road in South San Francisco and San Mateo, about 13½ miles in length. Wm. M. Abbott, J. R. Sloan and Chas. P. Gale are incorporators.

WALLACE, IDAHO.—Elmer Hughes, representing an electric street railway company of Missoula, Mont., is here looking over the route from Wallace to Wardner, and will report on the feasibility of an electric line over that route.

KINGSTON, ONT.—R. J. Carson, of this city, is interested in the proposed Corning-Toronto Electric Ry. which is being promoted by Boston, Mass., parties. The promoters have secured their charter, and expect to begin work as soon as the conditions of the weather will permit. The line will be completed by Dec. 31. The power will be secured from the Trent River, and the power-house located at Trenton on that river. Repair shops will be located here. Rights of way have been secured.

LIGHT, HEAT AND POWER PLANTS.

BANGOR, ME.—Fred. T. Dow, C. E., has made plans for the proposed water power development of the Penobscot River to its full capacity.

KENNEBUNK, ME.—City can have electric plant.

GREENVILLE, N. H.—Town to have electric plant.

ALBANY, N. Y.—A bill is before the legislature to appropriate $25,000 toward the beginning of a system for doing away with freshets by means of water storage. It is estimated that these storage dams can be used to develop electrically 1,500,000 HP. Geo. E. Ratter, Rochester, N. Y., is a member of the water storage commission.

BROOKLYN, N. Y.—Sites have been secured and plans are being made for two new power plants of the Brooklyn Rapid Transit Co., one of which is to have a capacity of 100,000 HP.

BUFFALO, N. Y.—The council committee on lamps may report in favor of letting a contract for electricity as an illuminant in place of the present system of gas lighting.

BUFFALO, N. Y.—The Cataract Power & Conduit Co. has filed plans for the construction of a new power house at No. 2280 Niagara St.

NEW YORK, N. Y.—R. G. Monroe, Comr. Water Supply Gas and Electricity, has been directed to secure an estimate of the cost of a municipal lighting plant, and the legislature will be asked to authorize its erection.

ONEIDA, N. Y.—C. W. Koiner, Supt., writes us that the Madison County Gas & Electric Co. is to soon extend its gas mains to Canastota. Operations have not been begun.

ONEIDA, N. Y.—Dewitt C. Hadcock, owner of electric plant to be erected at Lime Kiln Falls, writes us that the engineering work will be commenced March 25 and plans will be ready to be sent out April 10. The estimated cost of the plant is $300,000.

SODUS, N. Y.—We are informed that the Sodus Power Co. will install a 250-volt direct-current plant of a capacity of 2,000 incandescent of 16 c. p. each. The engine and dynamos are to be of direct-connected type. Bids will probably be called early in April. Bert H. Shepard, Des. Engr., 303 Kirk Bldg., Syracuse, N. Y.

SOUTHAMPTON, N. Y.—Bids are asked by the village trustees until March 23 for lighting the streets for two years. About 135 lights will be required.

GLOUCESTER, N. J.—The South Jersey Electric & Traction Co., 420 Federal St., Camden, N. J., may enlarge their power plant at this place.

DENVER, PA.—We are informed that the council has not reached a decision in the matter of an electric lighting plant. W. D. Fink, Burgess.

KUTZTOWN, PA.—Reports state that the Keystone Electric, Heat, Light & Power Co. is to improve its plant at a cost of $40,000.

PITTSBURG, PA.—Contracts for the equipment of the Brunots Island power plant of the Pittsburg Railways Co. have been let as follows: Six 1,500-KW. dynamos, Westinghouse Electric & Manufacturing Co.; six cross-compaund Corliss engines, Rice & Sargent, Providence, R. I.; boilers, Babcock & Wilcox Co., New York, N. Y.

STROUDSBURG, PA.—Reports state that the Monroe County Water Power & Supply Co. will at once erect a $75,000 power plant.

BALTIMORE, MD.—The Maryland Telephone & Telegraph Co. has filed a mortgage for $4,000,000. The company's charter authorizes it to enter the electric lighting business, and it is probable that the company will do so.

WASHINGTON, D. C.—Separate bids are wanted by the district commissioners until March 28 for lighting the streets, avenues, alleys and roads in the District of Columbia during the year ending June 30, 1904, with Welsbach or other high candle-power lights, and with naphtha lamps, as stated in our advertising columns.

ALEXANDRIA, VA.—City may have electric plant.

NORFOLK, VA.—A four years' city lighting contract has been let to the Norfolk, Portsmouth & Newport News Co.

PETERSBURG, VA.—The Welsbach Street Lighting Co. has offered to light the city with gas for $31.50 per lamp per year and the Passenger & Power Co. has offered to continue their present contract of $57 per 1,200-c. p. are lamp per year.

BYNUM, N. C.—John W. Hayes, C. E., Petersburg, Va., is said to be making plans for the improvement of the water power of the Odell Co. on the Haw River. It is said that the present dam will be rebuilt and raised, new machinery installed and the power largely increased.

GREERS, S. C.—City will install 12 to 15 2,000 c. p. each arc light plant. W. M. Ballinger is Secy. P. O., Greer Depot.

COLUMBUS, GA.—We are informed that the contract for street lighting for 1904 has been let to the Columbus Railroad Co. at $50 per lamp per year for an all-night service on all save three nights each month, when lamps are not lighted unless in cloudy weather. The above are the same terms at which the company held the previous contract. Robt. L. Johnson, Supt. Pub. Wks.

SPARKS, GA.—Electric lights proposed.

GAINESVILLE, FLA.—Gainesville Gas Co. is said to contemplate installing electric light plant.

TAMPA, FLA.—Plans and specifications were to have been ready March 15 for a lighting plant to be put in by Edward De Leon.

FORT PAYNE, ALA.—City to have electric plant.

ST. MARTINVILLE, LA.—Reports state that the local electric and water-works company have contracted for a $24,000 plant.

COLUMBIA, TENN.—Company electric light plant proposed. J. H. Carpenter is said to be interested.

MADISONVILLE, KY.—City will vote next fall on municipal electric plant.

OXFORD, O.—The Bonham & Cook Co. have asked for a power house franchise in this city.

SHERODSVILLE, O.—City electric plant talked off.

BLOOMINGTON, IND.—For a new heating and light plant for the State University $20,000 has been appropriated.

EVANSVILLE, IND.—State has appropriated $3,500 for a new dynamo for Southern Insane Asylum this city.

MUNCIE, IND.—We are informed that nothing definite has been done regarding the contemplated electric plant of the Wabash Oil & Gas Co. It is proposed to locate the plant in Carroll county. Frank Davis is manager.

DETROIT, MICH.—The Central Heating & Lighting Co., of Toledo, O., is said to be seeking a franchise in Detroit, and several other cities for installing heating and lighting plants.

DETROIT, MICH.—Reports state that Field & Hinsman, Consult. Engrs., 1203 Majestic Bldg., wish bids for furnishing three 500-KW. a. c. generators, seven 300-KW. rotary converters, seven 200-KW. transformers, two 50-KW. exciters, and the necessary switchboards for the equipment of the power house and substation of the London, Aylmer & North Shore Electric Railway.

GRAND RAPIDS, MICH.—Superintendent Meyer has reported that a municipal lighting plant for the city buildings could be installed at the city lighting station for $16,000.

LANSING, MICH.—Reports state that the Lansing Gas Co. will install a new plant this summer.

LOWELL, MICH.—The contract for constructing the new Lowell dam and power house for the Grand Rapids Edison Electric Co. has been let to W. E. Tench & Co., 239 Park St., Detroit, Mich.

NEGAUNEE, MICH.—The following estimate of cost of repairing the city water and electric light plant has been made: Two new boilers and cost of removing old ones, including stack, $6,400; new boiler room, 50 by 25 ft., $2,100; new duplex steam pump, $115; new heater, piping, etc., $925; one 3,000-light machine and fixtures, $3,050; a 250-HP. non-condensing engine, cost of erection, etc., $3,450; total, $16,040.

ASHTON, ILL.—Bids for installing a gasoline gas plant, for which $7,000 was voted, are reported as wanted until March 25. M. N. Glenn, Village Clk.

QUINCY, ILL.—We are informed that bids will probably be received until April 1 for proposed steam plant of The Independent Light & Power Co. The company will put in two 400-KW. alternating units and two 300-KW. power units to be run by direct connected compound engines. C. E. Mead, Gen. Mgr.

APPLETON, WIS.—Reports state that Capt. N. M. Edwards, of this city, is making plans for dams to be built along the Peshtigo River in Marinette county for generating electricity.

KEOKUK, IA.—J. C. Hubinger is to ask for steam heating plant franchise.

JANESVILLE, IA.—The citizens will vote on the granting of a franchise to the Cedar Falls & Janesville Power Co.

MUSCATINE, IA.—No bids were received by the council in answer to their recent advertisement for street lighting.

SHENANDOAH, IA.—The Shenandoah Electric Light & Power Co. has offered to sell its plant to the city.

FERTILE, MINN.—Electric plant talked of.

MANKATO, MINN.—Reports state that bids are asked by the council until March 23 for constructing power station, and until March 30 for an electric light plant. W. I. Gray, Minneapolis, Minn., is Engr.

BENEDICT, NEB.—Reports state that W. G. Keeler will remodel his electric light plant.

PINE BLUFF, ARK.—Extensions and improvements, according to reports, are shortly to be made on the electric light system of the Citizens Light & Transit Co. M. A. Austin, Pres.

TAHLEQUAH, IND. TER.—C. W. Turner, of Muskogee, has secured an electric light franchise in this city and will it is said move his plant here from Muskogee and erect a new plant in that place.

KREMMLING, COLO.—It is stated that the New Century Light & Power Co. proposes to erect a power plant at this place.

PUEBLO, COLO.—The Pueblo Gas & Fuel Co. is reported to have made arrangements for improving its plant within the next six months at a cost of $200,000. A gas holder of 150,000 cu. ft. capacity will be erected; also a water gas plant, the latter near Florence. L. E. Eyman is Pres.

SEATTLE, WASH.—The Seattle Cataract Co. has applied for an amendment to its franchise to permit of its engaging in general lighting and power business throughout the city.

PORTLAND, ORE.—Moses & Murdock have asked for a steam heating franchise. They propose to spend $100,000 on the project.

PORTLAND, ORE.—Bids for lighting the city are to be called soon. After Jan. 1, 1904, electric arc lights are to be used exclusively.

PRAIRIE CITY, ORE.—Franchise for electric plant granted to Reville Bros., who propose to at once commence work on plant on John Day River.

BERKELEY, CAL.—Bids are asked until April 6 for franchise for constructing and maintaining pole lines for transmitting electricity, as applied for by the Bay Counties Power Co. C. D. Maloney, Town Clk.

LOS ANGELES, CAL.—Bids are asked until April 8 for constructing power house at Fort Rosecrans, Cal. Capt. Edgar Jadwin, U. S. Engrs.

POMONA, CAL.—F. A. Worthley, Elec. Engr., Riverside, Cal., has made the following estimates of the cost of a municipal lighting plant: Steam equipment, $32,000; electrical station equipment, $15,000; pole line, $14,000; buildings, offices, storage tanks, $7,000; wells, $1,000; engineering plans, specifications and incidentals, $1,000.

REDDING, CAL.—The Northern California Power Co. of this city, which has purchased the plant and franchises of the Red Bluff Electric Light & Gas Co., will remodel the gas plant and install the Lowe system.

SAN JUAN, CAL.—R. F. Flint has a contract for constructing an acetylene gas lighting system.

NIAGARA FALLS, ONT.—The New Niagara Falls Power Co., according to reports, is soon to commence work on its Niagara power development. The electricity will be transmitted to Toronto, a distance of 90 miles, by a double pole line. It is estimated that the work will involve an expenditure of $5,000,000.

TWEED, ONT.—Electric plant talked of.

NELSON, B. C.—A. L. McCulloh, Cy. Engr., writes us that tenders were called for March 16 for sale of $150,000 of bonds. If the city is successful in disposing of these, bids for work and material will at once be asked, the work to commence as soon as practicable.

BONDS.—Crowley, La., votes to issue $100,000 of bonds for electric lights and water-works.——St. Martinsville, La., will issue $25,000 of bonds for constructing electric light plant and water-works. H. P. Fournet is Chn.——Floresville, Tex., votes April 22 on $18,000 electric light and water-works bonds.——Steubenville, O., thinks of issuing $75,000 municipal electric light plant bonds.——Detroit, Mich., will vote on bonds for constructing light plant.——Mayville, Mich., votes $5,000 bonds for municipal electric light plant.——Laurel, Del., may issue $20,000 of bonds for erecting electric light plant.——Rich Hill, Mo.,

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

votes to issue $57,500 of bonds for purchase of light and water plants.——South Stillwater, Minn., has voted on issue of $23,000 bonds for erecting electric light and water plants.——Floresville, Tex., votes April 22 on $18,000 water and light plant erection bonds.——Duluth, Minn., may issue $40,000 light and water system extension bonds.——East Tawas, Mich., considers issue of $10,000 bonds for improving electric light and water systems.——Allegan, Mich., is to issue $4,000 bonds for purchase electric light pole system.——Rantoul, Ill., issues $13,000 light and water plant improvement bonds.——Schoolcraft, Mich., votes $11,000 bonds for electric light plant.——Dexter, Mich., is to issue bonds for municipal lighting plant.——Athens, O., votes April 6 on $15,000 bonds for constructing municipal electric light plant.——Plymouth, Mich., votes to issue $12,500 bonds for constructing electric light plant. Edw. Gayde is Village Clk.

NEW COMPANIES.—Albemarle Light & Water Co., Albemarle, N. C.; $5,000.——The Independent Light & Power Co., Quincy, Ill.; $200,000; J. W. Cassidy, C. E. Mead, L. P. Wheeler.——Collins Light & Power Co., Collins, Miss.; $10,000; W. E. Payne, H. Swinney, J. F. Williamson.——Elizabeth City Light & Power Co. and the Elizabeth City Gas Co., Elizabeth City, N. C.; capital of $100,000 each; Daniel B. Banks, Milton W. Offett, Baltimore, Md.; C. N. Ferebee, Elizabeth City. The same parties are also incorporators of the Elizabeth City Sewerage Co., $100,000; and the Elizabeth City Water & Power Co., $100,000.——United Fuel Gas Co., New Martinsville, W. Va.; $1,000,000; H. B. Myer, R. T. Rossell, J. G. Frazer, Pittsburg, Pa.——Hancock Light & Power Co., Hancock, Me.——Electric Power Co., Keosauqua, Ia.; $10,000; Capt. W. A. Duckworth, S. W. Manning, E. L. McCord.

BRIDGES

WATERVILLE, ME.—It is stated that the Waterville & Oakland Electric Railroad will build two steel bridges along its line this spring. One of these is to be 252 ft. long and 14 ft. wide; the other will be 54 ft. long and 14 ft. wide.

CLAREMONT, N. H.—The matter of building a bridge over the Connecticut River with Weathersfield, Vt., was voted on at the town election.

PORTSMOUTH, N. H.—It is said that the B. & M. R. R. will spend $38,000 this spring in putting in new trusses and otherwise strengthening its bridge in this city.

SPRINGFIELD, MASS.—C. M. Slocum, Cy. Engr., has been making plans for city bridges.

TAUNTON, MASS.—The city engineer has stated that the Weir St. bridge should be replaced by a new structure. Luther Dean is Cy. Engr.

PROVIDENCE, R. I.—We are informed that the contract for a truss bridge, 40 ft. wide, on concrete and granite foundation, at Earl St., has been let to the United Construction Co., Albany, N. Y. H. A. Wing, Des. Engr., care Gorham Manufacturing Co.

HARTFORD, CONN.—We are informed that it is possible that something may be done within a year toward the proposed stone bridge over the Connecticut River. The bridge proposed is to be 1,000 ft. long, 90 ft. wide and the estimated cost is $1,940,000. The matter is in charge of the Connecticut River Bridge and Highway District Commission and Edwin Dwight Graves, Hartford, Conn., is Ch. Engr.

FLUSHING, N. Y.—Plans are said to be in the hands of Edw. A. Byrne, Supt. Bridges of Queens and Newtown Creek, for a bridge over Flushing Creek at Jackson Ave., Newtown. The bridge and approaches are to be 730 ft. long, and the estimated cost is $270,000. It is hoped to start construction work in July.

HURON, N. Y.—E. W. Sours writes us that an effort is being made to get a state appropriation for the Sodus Bay bridge at Resort Ave. P. H. Prindle, North Huron, N. Y., is Des. Engr.

NEW YORK, N. Y.—Bids are asked by Louis F. Haffen, Pres. Bronx Borough, until March 23, for constructing bridge and abutments over the New York & Harlem R. R. at E. 180th St.——Bids are asked by the Park Board, 5th Ave. and 64th St., until March 26, for concrete-steel and stone bridge over Bronx River, near New Ave., in Bronx Park. Wm. R. Willcox, Comr.

ERIE, PA.—The Philadelphia & Erie R. R. and the Erie Electric Motor Co. have bound themselves to give $20,000 and $15,000 respectively toward the construction of the overhead crossing at Buffalo Road. The city's share of the cost is $15,000.

ERIE, PA.—Bids are asked until April 2 for material and labor for steel bridge of about 500,000 lbs. on the Buffalo Road, as is stated in our advertising columns. Benjamin E. Briggs, Cy. Engr.

PITTSBURG, PA.—The Pennsylvania Railroad has approved plans for a bridge over the Allegheny River from Redbank, on the Enon cut-off. The bridge will be 200 ft. high.

GLEN BURNIE, MD.—Bids are asked until March 26 for constructing bridges over Deep River, between Howard and Anne Arundel counties. B. S. Cromwell, Comr.

FRONT ROYAL, VA.—The Warren county supervisors are to span the Shenandoah River at Carsons Ford with a 540-ft. steel bridge. The approaches are to be 150 ft. each and the estimated cost is $15,000.

RICHMOND, VA.—The contract for replacing about 500 ft. of James River bridge of the Atlantic Coast Line R. R. has been let to the American Bridge Co. The contract involves about $70,000.

HUNTINGDON, TENN.—Much damage is reported done to county bridges by recent floods.

KNOXVILLE, TENN.—We are informed that the contract for a 600-ft. steel viaduct on stone foundation, the estimated cost of which is $94,000, will be let about May 1. T. J. Moreland, Cy. Engr.

MARYVILLE, TENN.—Blount county has been taking steps toward erecting a steel bridge over Little River at Rockford.

STURGIS, KY.—Cypress Creek bridge agitated.

AKRON, O.—It is likely that the Mill St. viaduct will be built this summer at a cost of $125,000. Of this sum the city will pay $31,000. John W. Payne is Cy. Engr.

COLUMBUS, O.—Bids are asked until April 14 for constructing substructure and superstructure of six county bridges; also approaches, pipe culverts and arch culverts. L. E. Jones, County Auditor.

YOUNGSTOWN, O.—Reports state that the proposed bridge from Struthers Road to the Youngstown Iron Sheet & Tube Co., is to be erected soon. The structure is to be several hundred feet long and will bridge the railroad tracks at that place.

BLUFFTON, IND.—The Wells county auditor is calling for bids until April 7 for constructing 15 new single-span bridges, ranging from 25 ft. to 65 ft. in length.

SHELBYVILLE, IND.—The county council has appropriated $2,500 for a bridge over Little Blue River in Union Township.

FRANKFORT, IND.—Reports state that county commissioners are to readvertise for bids for constructing 19 bridges, the bids previously received for this work having been rejected.

GRAND RAPIDS, MICH.—Reports state that the bridge at North Park has been swept away by an ice jam, causing a loss of $5,000. The steel bridge of the Detroit, Grand Haven & Milwaukee R. R. is also reported to have been much damaged.

GRAND RAPIDS, MICH.—Bids are asked until March 21 for $50,000 bonds, the proceeds to be used for constructing two new bridges over Grand River, at Wealthy Ave. and Bridge St. Isaac F. Lamoreux, Cy. Clk.

MENOMINEE, MICH.—Contract for two county bridges has been let to Wisconsin Bridge & Iron Co., Milwaukee, Wis., for $1,123.

PONTIAC, MICH.—Bids are asked until March 23 for constructing two concrete steel bridges. T. J. Fisher, Cy. Engr.; Fred. O. Thompson, Cy. Clk.

PEKIN, ILL.—The supervisors have made provisions for two new bridges, one between Morton and Cooper's station, to cost $1,500, and the other near Hopedale, to cost about $5,000.

PEORIA, ILL.—Contract for bridge over Farm Creek has been let to Joseph Cody & Sons, for $2,221.

STERLING, ILL.—The matter of a $20,000 joint county bridge over Rock River at Hillsdale will be decided soon by the supervisors of Whiteside and Rock Island counties.

BURLINGTON, IA.—E. A. Steece, Cy. Engr., writes us that plans have not been completed for proposed Sixth St. viaduct.

ST. PAUL, MINN.—Contract for superstructure of Grand Ave. bridge has been let to the St. Paul Iron Works for $45,113.

WINONA, MINN.—County commissioners have decided to build an iron bridge over Rollingstone ditch at Minnesota City.

INDIANOLA, NEB.—Considerable damage has been done to bridges in this vicinity by the recent freshets.

LINCOLN, NEB.—The Union Pacific, the C., B. & Q., and the Omaha R. R. have petitioned for leave to construct a viaduct over their tracks at Eighth St. and Capital Ave. The estimated cost of the structure is $75,000. Andrew Rosewater is Cy. Engr.

LOUISVILLE, NEB.—Local reports state that nearly 400 ft. of the Missouri Pacific R. R. bridge and 450 ft. of wagon bridge at this place were swept away by the recent high waters.

McCOOK, NEB.—Reports state that ten bridges in Red Willow county have been damaged by high water to the extent of $3,000.

EVARTS, S. DAK.—A pontoon bridge between this city and west bank of Missouri River is proposed.

BIG TIMBER, MONT.—County commissioners have been considering the rebuilding of a number of county bridges to replace the wooden structures.

HELENA, MONT.—The matter of a county bridge over the Missouri River at Spratt's ferry is being agitated. J. F. Wegner is Chn. County Comrs.

WHITE SULPHUR SPRINGS, MONT.—County commissioners are petitioned to construct bridge over Smith River at Brickert Lane.

KANSAS CITY, MO.—The Kansas City Belt Line R. R. will erect several viaducts in this city.——The Rock Island and Union Pacific railroads, according to reports, will also erect a 1,500-ft. viaduct.

ARKADELPHIA, ARK.—Contract for bridge over Onachita at this place has been let to Stupp Bridge & Iron Works, St. Louis, Mo., for $29,975.

AUSTIN, TEX.—The recent heavy floods are reported to have created much damage among the various bridges and steps are already being taken in many counties to replace these structures.

OKLAHOMA CITY, OKLA.—Chas. S. Wadsworth, Cy. Engr., writes us that no positive agreement has been reached with the Choctaw R. R. Co. regarding the construction of a viaduct over the tracks. It is expected, however, that an understanding will be come to at an early date.

PUEBLO, COLO.—Bridge at Eighth St. desired.

RATON, N. M.—Bids are asked until April 6 for material and construction of 40-ft. long bridge over Railroad Canon, Arroya. J. B. Brackett, Probate Clk.

SPOKANE, WASH.—It is probable that a combination steel and wood bridge will be erected over Latah Creek at a cost of $35,000.

TACOMA, WASH.—Ordinances have been before the council appropriating $14,000 for the Puyallup River drawbridge; also appropriating $6,900 for repairs of Bridge No. 8 on South 34th St., and $2,950 for repairing bridges Nos. 11 and 12.

PORTLAND, ORE.—The city engineer is to make plans and estimates for two or three large bridges suitable for spanning Marguam Gulch.

REDDING, CAL.—Contract for stringer bridge over Pitt River at Peck Ferry let to Robt. Wagner, Redding, for $2,045.

SAN BERNARDINO, CAL.—Bids are asked until April 13 for constructing two-span, five-panel, riveted-span bridge over Warm Creek, on Colton Ave., and for four-span, five-panel, riveted-span bridge over Santa Ana River at Tippicanoe Ave. Charles Post, Deputy Clk.

SAN DIEGO, CAL.—Proposed $500,000 bond issue contains sum of $5,000 for two bridges on B St.

SAN LUIS OBISPO, CAL.—Reports state that bids are asked by the county clerk until April 6 for constructing bridge on Cherro St., near Islay.

BOISE, IDAHO.—State senate has passed a bill appropriating $20,000 for bridge over Kootenai River, at Bonner's Ferry.

WEISER, IDAHO.—Mayor Thos. E. Kelley writes us under date of March 10 that contract for proposed three-span steel bridge on concrete foundation will be let shortly. The cost of the work is $30,000, and plans were made by the state engineer, Boise, Idaho.

PETROLEA, ONT.—Bids are asked until April 6 for constructing two concrete abutments and for putting on a concrete floor with expanded metal. Jno. McHattie, Town Clerk.

BUILDINGS.

NORTH CHELMSFORD, MASS.—Bids are asked until March 24 for installing heating apparatus at the truant school. S. O. Upsham, County Comr., Court House, Cambridge, Mass.

PITTSFIELD, MASS.—A petition is in circulation for a $40,000 brick school.

BINGHAMTON, N. Y.—A new armory will probably be erected next year.

BROOKLYN, N. Y.—A new fireproof armory will be built for Troop C, costing $500,000.

BUFFALO, N. Y.—Plans and specifications will be prepared by commissioners of public works for new police station.——A site has been purchased for the $100,000 Marine Hospital building. Plans to be prepared by Architect Wheaton.

ITHACA, N. Y.—A dormitory building for Cornell University is being discussed.

NEW YORK, N. Y.—Bids are asked by the fire department until March 23 for furnishing structural steel for repair shop at 12th Ave. and 56th St. T. Sturgis, Comr.

NEW YORK, N. Y.—Plans have been filed by P. Griffin, Arch., 244 Fifth Ave., for 3-story brick fire-house at 52-54 East 114th St., costing $65,000; by Bronx Architectural Co., 2307 Third Ave., for 6-story tenement, 50 × 90 ft., at 154th St. and Melrose Ave., for T. D. Malcolm, 167th St. and River Ave., costing $45,000; by G. F. Pelham, Arch, 503 Fifth Ave., for two 6-story tenements, 50 × 77 ft. at 208-214 East Seventh St. for Horowitz Realty Co., 67 Seventh St., costing $90,000; by J. McGovern, Arch., 84 East 103d St., for 4-story brick flat, at 106th St., costing $100,000; by Sass & Smallheiser, Archs., 23 Park Row, for 6-story brick tenement at 237-239 Eldridge St., for L. Spielberger, 76 St. Mark's Place, costing $45,000; by J. F. Meehan, Arch., 1796 Anthony Ave., for two 5-story brick tenements, 40 × 84 ft., at Prospect Ave., for John McGrath, 1796 Anthony Ave., costing $70,000; by F. L. Ellingwood, Arch., for 6-story lofts, 66 × 65 ft., at 219 Greene St., for C. W. Schumann, costing $60,000; by G. F. Pelham, Arch., 59 Fifth Ave., for 9½-story brick hotel, 40 × 89 ft., at 147-151 West 47th St., for S. Wolf, 2603 Broadway, costing $350,000; by W. H. Birkmire, Arch., 396 Broadway, for 11-story brick warehouse, 229 × 115 × 115 ft., at West and Hubert Sts., for Varick Realty Co., 35 Wall St., costing $675,000; by C. P. Gilbert, Arch., 1123 Broadway, for 5-story brick dwelling, 23 × 80 ft., at 21 West 53d St., for F. C. Graves, Waldorf-Astoria Hotel, costing $50,000; by H. Kufka, Arch., 99 Nassau St., for 12-story brick hotel, at 153-155 West 43d St., for Goelet estate, 9 West 17th St., costing $180,000.

NIAGARA FALLS, N. Y.—The Y. M. C. A. building will probably cost $50,000. R. L. Cheney, Albany, is interested.

ROCHESTER, N. Y.—No delay is anticipated in erecting the Bevier Building, which is to be built by the Rochester Athenaeum & Mechanics Institute.

SARATOGA, N. Y.—An appropriation of $90,000 has been secured for a public building.

UTICA, N. Y.—An additional appropriation of $350,000 will be asked of the legislature for completing the county building. O. W. Cutler, Boston, Mass., is Arch.——The new depot of the New York Central Ry. will be erected as soon as the frost leaves the ground.

NEWARK, N. J.—J. Casale will erect a 10-story apartment house at a cost of $150,000. White stone will be used.

NEW BRUNSWICK, N. J.—The Pennsylvania Ry. Co.'s new depot at Easton Ave. and Albany St. will be of terra cotta, brick, stone trimmings and cost $50,000. A baggage elevator will be installed.

BEAVERTOWN, PA.—A new depot may be erected.

LUZERNE, PA.—The new court house will be erected by W. J. Smith on the river front at a cost of $1,000,000.

PHILADELPHIA, PA.—J. Stafford will erect a 15-story, 140 × 180 ft., apartment house on 16th St., at a cost of $1,000,000; stone, brick and terra cotta will be used.——John Wannamaker will erect a 12-story steel fireproof store at 13th and Chestnut Sts. at a cost of $5,000,000. There will be 62 elevators installed, and East Indian mahogany will be used. E. R. Graham, Arch., Rookery Bldg., Chicago, Ill.——Snare & Triest Co., Cortlandt St., New York, received the machine shop contract at League Island navy yard for $300,000.

PHILADELPHIA, PA.—R. W. Boyle, Arch., 1626 Chestnut St., is preparing plans for the Little Sisters of the Poor building at 53d St. and Chester Ave. Cost is $300,000.

PHILADELPHIA, PA.—The Thompson, Starrett Co., New York, has received contract from Bailey, Banks & Biddle Co. for erecting 10-story brick, stone and steel fireproof building at 12, 18-22 Chestnut St., costing $500,000.

PHILADELPHIA, PA.—D. A. McClelland, 519 South 20th St., received contract for erecting 6-story brick manufacturing building, 40 × 130 ft., at 1023-25 Vine St. for M. E. Belmont.

PITTSBURG, PA.—Holmes & Sons, will erect a building 88 × 84 ft. at Wood St. and Fourth Ave.

WASHINGTON, PA.—The post office building will probably cost $80,000.

WILLIAMSPORT, PA.—Architect Reitmeyer's plans for addition to court house have been approved.

ANNAPOLIS, MD.—E. Flagg, Arch., 35 Wall St., New York, has completed plans for the 3-story granite and steel gymnasium, 175 × 75 ft. Bids to be asked soon.

ARLINGTON, MD.—I. Arthur & Son were the lowest bidders for the new Masonic Temple on Main St. C. F. Gerwig, Arch.

BALTIMORE, MD.—E. Laferty, Arch., Builders' Exchange, has received bids for the Conway Warehouse Co.'s 5-story brick and steel warehouse, 94 × 300 ft., on Barre St., costing $150,000.

BALTIMORE, MD.—J. H. Miller, 112 Dover St., received contract from Baltimore Refrigerating & Heat Co. for new $150,000 plant at Eutaw St. The Starr Engr. Co., 258 Broadway, New York, is in charge of equipment.

WASHINGTON, D. C.—Preliminary drawings have been received for the Pennsylvania Ry. Co.'s depot, the minimum cost of which will be $4,000,000. White marble will probably be used.

WASHINGTON, D. C.—An appropriation of $80,000 has been made for 2-story brick, stone and steel stables for the Bureau of Printing and Engraving.——B. S. Simmons, Arch., Warder Bldg., is preparing plans for 5-story brick, stone and steel apartment house at 14th and Massachusetts Ave. for F. T. Sauner, costing $100,000.——C. A. Didden & Son, Archs., Corcoran Bldg., are ready for estimates for 8-story brick, stone and steel hotel at E St. for R. Bortner, costing $300,000. Steam and electric plants installed; also elevators.——The Brennan Construction Co., 31st St., has contract for constructing the 4-story brick, stone and steel addition to the Providence Hospital at 22d and D Sts., costing $100,000. Wood, Dorn & Denning, Archs., 808 17th St.——H. I. Cobb, Arch., Treasury Bldg., is preparing plans for brick and steel additon to McKinley Normal Training School, costing $135,000.——A. P. Clarke, Arch., 605 F St., is receiving bids for 4-story brick and steel fireproof apartment house, 78 × 120 ft., at Irving place for C. A. Snow.

STAUNTON, VA.—T. J. Collins & Son, Archs., are receiving estimates for new 3-story brick and stone, 60 × 100 ft., hospital for C. R. Caldwell.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

CLARKSBURG, W. VA.—T. P. Riddle, Secy., writes that the new Y. M. C. A. building will be four or five stories high and 50 × 80 ft.

RALEIGH, N. C.—An appropriation of $50,000 has been made for erecting a building for the use of the Agricultural Dept. of the A. and M. College.

ABBEVILLE, GA.—Bids are asked by the commissioners of roads and revenue until May 4 for erecting a $50,000 court house. F. P. Milburn, Arch., Columbia, S. C.; G. F. McLeod, Chn.

ATHENS, GA.—The plans of L. F. Goodrich, Arch. Augusta, have been accepted for the new city hall building, the cost of which will be $40,000. Granite, brick and oolitic limestone will be used.

ATHENS, GA.—Work will soon start on new government building. J. W. Barnett, Cy. Engr. Cost is estimated at $100,000.

ATLANTA, GA.—The Atlanta Terminal Co.'s new union depot will cover 630,000 sq. ft. The waiting room for white people will cover 7,500 sq. ft. and for colored 4,000 sq. ft.——The site for the new government building is said to have been purchased for $240,000.

MACON, GA.—The sum of $306,000 has been appropriated for new federal building.

SAVANNAH, GA.—The new city hall building will be four stories and cost about $150,000. Granite, brick and marble will probably be used. Plans to be submitted within 60 days. H. Myers is Chn. of Com.

BIRMINGHAM, ALA.—The Benedictine Sisters will erect a $100,000 convent.——The Y. M. C. A. will erect a $100,000 building.

MOBILE, ALA.—The City National Bank will erect a 5-story building on North Royal St.

ALEXANDRIA, LA.—Plans and bids will soon be asked by the board of aldermen for a $50,000 high school building.

LAKE CHARLES, LA.—N. A. Dawson, Orange, Tex., received the contract for the new city hall at North Court St.

NEW ORLEANS, LA.—A site costing $125,000 has been selected for the new court house.

CHATTANOOGA, TENN.—A new power house will be erected and improvements made to the county jail at a cost of $40,000.

CHATTANOOGA, TENN.—Architect Downing has prepared plans for new $50,000 Carnegie Library building.

KNOXVILLE, TENN.—A new depot will be built by the Louisville & Nashville Ry. at a cost of $125,000.

DANVILLE, KY.—The old court house has been condemned and a new one will be built.

CANTON, O.—Work will soon start on $127,000 market and auditorium.

CINCINNATI, O.—The Baltimore & Ohio Southwestern Ry. will erect a new 6-story brick and steel freight and warehouse, 60 × 580 ft. at a cost of $350,000.

CLEVELAND, O.—The Haddam Building Co. will erect a 6-story, 100 × 250 ft., apartment house at Euclid Ave. and Doan St. at a cost of $190,000, and brownstone and marble will be used. Elevators to be installed.——J. and L. Schlather will erect an apartment house at a cost of $40,000. F. W. Striebinger, 131 Euclid Place, is Arch.

COLUMBUS, O.—Bids are asked by W. D. Guilbert, State Auditor's office, until April 2, for improving capitol building. F. L. Packard, Arch., Hayden Bldg.——D. W. McGrath received contract for new engineering building for $73,883.

HAMILTON, O.—The new government building will be located on the site of the present residence of P. Schwab.

HUNTINGTON, IND.—M. G. Wright, Clk., writes us that a petition is now in circulation for new courthouse.

INDIANAPOLIS, IND.—An appropriation of $150,000 has been made for Indiana building and exhibit at the St. Louis Exposition. Bids will be asked when plans are prepared.

INDIANAPOLIS, IND.—The Indiana Normal Kindergarden will erect a $50,000 brick and stone building at Alabama and 23d Sts. Mrs. L. J. Blaker has charge.

MARION, IND.—Bids are asked until March 26 for erecting a Y. M. C. A. building. B. L. French, Arch., 408 Iroquois Bldg.

NEW CASTLE, IND.—The commissioners are considering an addition to county court house to cost $30,000.

RICHMOND, IND.—Bids are asked by the Richmond Street & Interurban Ry. Co. for erecting office and station building. Address Secretary, 428 Main St.

SOUTH BEND, IND.—The Maccabees will erect a $75,000 temple.

ST. JOSEPH, MICH.—The Masons will build a $50,000 temple.

SAULT STE. MARIE, ONT.—Bids are asked for building a church for the Central Methodists. H. Simpson, Arch., Toronto.

CHICAGO, ILL.—The building of Stumer, Rosenthal & Eckstein will be remodeled at cost of about $40,000. Elevators to be installed.——The new station being erected by the Lake Shore Co. will be 13 stories high and cover 43,026 sq. ft.

CHICAGO, ILL.—A 15-story office building, costing $1,000,000 will be erected by the Chicago Methodist Social Union. A. Gilbert is Pres.

EDWARDSVILLE, ILL.—The new jail will cost $25,000 and the court house $85,000.

EAU CLAIRE, WIS.—Bids are asked until April 6 for erecting library building. F. Cotten, Chn. Bldg. Com.; Patton & Miller, Arch., Chicago.

OSHKOSH, WIS.—The Union Club will erect a $50,000 clubhouse.

DECORAH, IA.—The county court house will be built by O. H. Olson, Stillwater. Heating and plumbing will be let later.

DES MOINES, IA.—A new city hall is being discussed.

FAIRFIELD, IA.—A new armory is to be built for Company M.

MARION, IA.—New court house is being discussed.

MANKATO, MINN.—Agent Moore of the Milwaukee Ry. has received information that a joint passenger depot will be built with Chicago Great Western Ry. at cost of $60,000. Two freight depots will also be erected.

STILLWATER, MINN.—A survey has been made for new federal building. Contracts will probably be let this spring.

ABERCROMBIE, N. DAK.—Completion of capitol will cost $2,500,000 and office building for representatives $3,100,000.

PINERIDGE, S. DAK.—Bids are asked until April 15 for furnishing building materials. J. R. Brennan, U. S. Indian Agent.

WEBSTER, S. DAK.—Bids are asked until April 7 for erecting courthouse. Kinney & Detweiler, Arch., 909 Northwestern Bldg., Minneapolis, Minn.

EVANSTON, WYO.—The government building will cost $175,000. There will be 5,000 sq. ft. of space.

BILLINGS, MONT.—The plans of C. E. Bell, Arch., Helena, for the new $75,000 court house have been accepted. Bids are asked until March 21.

KANSAS CITY, MO.—Work will be started on the new $400,000 federal building as soon as plans are completed.——J. C. Gates and W. H. Knotts will erect 3-story brick building, 96 × 115 ft., at 1008-14 Grand Ave., at cost of $35,000.

ST. LOUIS, MO.—The New York state legislature will be asked for an increase of $200,000 for the state building at the World's Fair. A site of 800,000 sq. ft. has been chosen.

PINE BLUFF, ARK.—Jefferson lodge, Independent Order of Odd Fellows, will soon erect a $50,000 building on West Second Ave.

DALLAS, TEX.—The Dallas Scottish Rite Cathedral Association will erect a temple at Harwood and Wood Sts. at cost of between $75,000 and $100,000.

DALLAS, TEX.—J. Bardon, Fort Worth, received contract for erecting the $109,854 federal building.

WACO, TEX.—Plans have been received by Postmaster Stone for addition to federal building.

PORT TOWNSEND, WASH.—Bids are asked until April 2 for constructing barracks at quarantine station. M. H. Foster, Custodian.

SEATTLE, WASH.—The Butler Hotel will be remodeled at cost of $150,000. E. W. King is Mgr.

SEATTLE, WASH.—Reports state that a new city hall may be built, costing $500,000.

TACOMA, WASH.—It is stated that H. Longstreth's building will be six stories and cost $50,000.

WHATCOM, WASH.—A $50,000 Catholic church is to be considered.

CONDON, ORE.—Bids are asked until March 21 for erecting brick courthouse. C. H. Burggraf, Arch., Albany.

LOS ANGELES, CAL.—Plans are nearing completion for the $150,000 Good Samaritan hospital.

NAPA, CAL.—Reports state that plans are being prepared for an 80-room brick and cement building in connection with the Napa State Hospital at cost of $35,000. Dr. L. E. Stone is a member of the committee.

OAKLAND, CAL.—The committee of Odd Fellows will probably recommend erecting a 5-story brick and stone structure costing $55,000.

PASADENA, CAL.—Bids are asked until March 24 for 2-story brick school. E. A. Walker, Clk. Bd. Education.

SAN DIEGO, CAL.—An appropriation of $61,000 may be made for the State normal school building. Hebbard & Gill, Archs.

SAN JOSE, CAL.—It is stated that a site has been purchased on Market St. and a $50,000 building will be erected for city and county emergency hospital.

SAN FRANCISCO, CAL.—Reports state that E. B. Hindes will erect 8-story fireproof hotel on Sutter St.; two 40 HP. boilers will be installed.——Bids are asked until April 6 for erecting two store houses at the Presidio. C. P. Miller, Q. M.

PHOENIX, ARIZ.—The Central Ave. Improvement Co. will erect a $45,000 office building. Structure will be 137½ × 110 ft. and two stories.

TORONTO, ONT.—Plans have been completed for the Grand Valley Electric Ry. Co.'s theatre at their park between Brantford and Paris.——Brown & Co. will erect 8-story brick store, at cost of $50,000.

TORONTO JUNCTION, ONT.—A. Campbell, M. P., states that bids for new custom house and post office will be called for shortly.

CHARLOTTETOWN, P. E. I.—Bids are asked until April 1 for completing annex to Chalottetown Hospital. J. C. McDonald, Bishop.

BONDS.—San Francisco, Cal., will issue $4,000,000 for schools.——An election will be held by board of education, Pomona, Cal., March 30, to decide upon issue of $85,000 and $30,000 for park purposes.——San Pedro, Cal., may issue $35,000 for new city building.——An issue of $300,000 for schools is being discussed by St. Joseph, Mo.——A bond issue for schools in various cities has been authorized, Indianapolis, Ind.——Election will be held in April to decide upon a bond issue for borough building in Sewickley, Pa. D. H. Campbell, Boro. Engr.——Tacoma, Wash., will vote April 11 for $200,000 worth of bonds for purchasing and reconstructing the tourist hotel for school purposes.——School bonds to the amount of $35,000 will be issued by Fairhaven, Wash.——Long Island, N. Y., may issue $450,000 for new borough hall.

WATER SUPPLY AND IRRIGATION.

SANFORD, ME.—Town has been considering contracting with Sanford Light & Water Co. for hydrant service at $33.33 each per year; also the purchase of new water tank.

CLAREMONT, N. H.—Town has voted on extension of water service to Drapers Corner.

DERRY, N. H.—Town votes not to buy works.

LITTLETON, N. H.—Town has voted to borrow $200,000 for purchase water and light plants of Littleton Water & Light Co., and plant of Crystal Spring Water Co. of Bethelem, N. H.

BRATTLEBORO, VT.—Town may vote on extension of water system to Sonto & Co.'s factory, at a cost of $6,000.

BROCKTON, MASS.—Residents of Pearl St. are asking that pipes be laid along that street for 2½ miles.

FALL RIVER, MASS.—We are informed that no contracts have been let as yet for proposed $20,000 extension of the water-works. The above amount is to be spent for mains and no other important improvements are contemplated. Patrick Kiernan, Supt. W.-W.

FALMOUTH, MASS.—Bids are asked until March 26 for furnishing cast-iron water pipe, special castings, hydrants, gates and gate boxes for a 5½-mile extension of the water mains. Louis E. Hawes, Engr.; John H. Crocker, Comr.

FALMOUTH, MASS.—Bids are wanted by the water commissioners until March 26 for furnishing c.-i. water pipes, special castings, hydrants, gates and gate-boxes for extensions of the water mains of about 5½ miles, as stated in our advertising columns. Louis E. Hawes, Engr.

LEXINGTON, MASS.—Bids are wanted by the water commissioners until March 25 for laying about 9,000 ft. of c.-i. water pipe, mainly 12-in., setting hydrants, gates, etc., as stated in our advertising columns. Louis E. Hawes, Engr.

MALDEN, MASS.—Works to be extended at cost of $25,000.

MANSFIELD, MASS.—D. S. Spaulding, Comr., writes us that legislative leave has been asked to issue $10,000 of bonds for extending water mains and other improvements.

MANCHESTER, MASS.—Town appropriated $2,500 for water services and main extensions this year.

MELROSE, MASS.—Aldermen have passed ordinance providing $40,000 for water department—$25,000 for maintenance and $15,000 for construction. The latter sum will probably be used to replace old cement pipes with cast-iron ones.

MILFORD, MASS.—At recent town meeting contract for water supply was ordered made with Milford Water Co. for one year. Matter of purchase of works of that company was not considered.

NORTH ANDOVER, MASS.—Water system to be extended through Pond and Bradford Sts. at a cost of $7,000.

RIDGEFIELD, CONN.—We are informed that the proposed extension of the works of the Ridgefield Water Supply Co. is to consist of constructing additional wells. The company will install meters also. Edward W. Shedd, 146 Westminister St., Providence, R. I., is Des. Engr.

ROCKPORT, MASS.—Chas. E. Green is a member of a committee to investigate the best method of purifying the water in Cape Pond.

SPRINGFIELD, MASS.—Samuel M. Gray, Providence, R. I., and Geo. W. Fuller, New York, N. Y., have been selected to consider the matter of this city's water supply.

UXBRIDGE, MASS.—Committee, of which Gideon M. Aldrich is a member, has been selected to investigate the subject of additional water supply.

COLLINSVILLE, CONN.—New water company has been formed here.

NEW BRITAIN, CONN.—City is asking legislative leave to take water from the north branch of the Pequabuck River for an additional supply.

NEW LONDON, CONN.—Bids are asked by the Constructing Quartermaster, 27 Granite St., New London, until April 10, for laying water mains from Witch Hill to and around post, Fort Mansfield, R. I.

WATERBURY, CONN.—R. A. Cairns, Cy. Engr., writes us that a bill is before the general assembly to authorize a $100,000 bond issue for high service. No plans, however, have been made yet and there is no prospect of any construction this year.

COHOES, N. Y.—Water commissioners are considering methods of procuring good water supply.

ITHACA, N. Y.—The contract for building chemical filtration plant for the Fall Creek water for Cornell University has been let to the Continental Filtration Co., New York.

NEW YORK, N. Y.—Bids are asked by the Department of Water Supply, Gas & Electricity, 13 Park Row, until March 24, for laying water mains in Silver Lane, West Farms Road, Bear Swamp Road and Victor St. Robt. Grier Monroe, Comr.

OSWEGO, N. Y.—We are informed that a special taxpayer's election has not been held yet to authorize sale of bonds for extending the city works. The new source of supply is to be from Lake Ontario. Thos. H. Bennett is Secy. and Supt. W.-W.

SCHENECTADY, N. Y.—The water commissioners have recommended that extensive improvements be made to the water systems. The cost of some of these are as follows: 30-in. main, laid complete, $179,000; pumping engine and boilers, $50,756; stand-pipe, $43,800; enlarging collecting gallery, $22,000.

VICTOR, N. Y.—Village works considered.

WATERTOWN, N. Y.—Jno. C. Knowlton, Pres. Water Bd., writes us that proposed plans for filter for water-works have been referred to a popular vote to be held March 20.

WAYLAND, N. Y.—The matter of works was voted on March 17.

CAMDEN, N. J.—Reports state that bids are asked until March 24 for removal of Blake 10,000,000-gallon pump from Pavonia pumping station to Morris pumping station, and the building of new foundations and placing pump thereon. Joseph Potter, Chn. Water Com.

EAST ORANGE, N. J.—Contract has been made with Newark for water supply for a year at $80 a million gallons.

ALLENTOWN, PA.—We are informed that the contract for extending water-works, the itemized bids for which were given in our last week's issue, has been let to Geo. H. Harden, Lentz Bldg., Allentown, Pa. Jacob S. Reninger, Secy. Water Comrs.; J. Howard Martz, Cy. Engr.

CRAFTON, PA.—Talk of municipal works.

ERIE, PA.—We are informed that specifications for proposed water-works improvements are not yet completed, but it is expected that this will be done shortly. The cource of the proposed new supply is Lake Erie. Clark Olds, Pres. Water Comrs.; George C. Gensheimer, Secy.

LANCASTER, PA.—E. F. Frailey, Supt. W.-W., writes us that bids have not been asked for proposed water-works improvements and will not be until specifications are completed, which will be about April 1. Other reports state that the improvements are to consist of a pump, new stand-pipes, 5,000 ft. 30-in. force main and high and low-service system.

PITTSBURG, PA.—Public works department has been engaged on plans for extending water system in downtown section of city.

SOUTH BETHLEHEM, PA.—A committee has been appointed to confer with the Consolidated Water Co. relative to supplying pure water.

WASHINGTON, D. C.—The Secretary of the Interior has authorized the securing of the necessary rights of way, etc., for constructing the irrigation works in the following localities: Wyoming, Sweetwater dam; Montana, Milk River; Colorado, Gunnison Tunnel; Nevada, Truckee; Arizona, Salt River reservoir. The cost of the projects is estimated at $7,000,000, and they will provide for the irrigation of about 600,000 acres of arid lands. In addition the Gray Bull reservoir project is to be taken up immediately. The Secretary has also authorized the expenditure during 1903 of $450,000 in surveys, borings and other examinations.

BARTON HEIGHTS, VA.—Works and sewers to be constructed here at cost of $10,000.

CHRISTIANSBURG, VA.—Bids are asked until April 1 for franchise for constructing works and for supplying power to electric light plant. E. S. Hagan, Clk.

NEWPORT NEWS, VA.—City municipal works are to be considered. Councilman A. F. Burcher introduced resolution.

CONCORD, N. C.—Contracts for the water-works system have been let as follows: Laying of pipes, Guild & Co., Chattanooga, Tenn., $10,510; building power house, engine beds, reservoir, foundation for stand-pipe, and boil-

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

er settings, R. A. Brown, $7,688; two pumps and water heater, Harry A. Miller, Wilmington, Del., $2,175; furnishing boilers and stand-pipe, R. D. Cole & Co., Newnan, Ga., $7,515; hydrants and valves, R. D. Wood & Co., Philadelphia, Pa., $3,935; pipe, Morgan Pipe & Foundry Co., Lynchburg, Va., $31,965; compressor and equipment of wells, Sydnor Pump & Well Co., Richmond, Va., $4,850.

LANCASTER, S. C.—Works talked of; cost, $18,000.

NEW BERRY, S. C.—For purchase of pump and reservoir repairs $3,000 has been appropriated.

SMITHVILLE, GA.—We are informed that this city wants bids for driving artesian wells. At least a 4-in. pipe well is wanted. There are at present two flowing wells 950 ft. deep in the city. City wishes to begin as soon as bond issue can be disposed of. C. A. Rhodes, Mayor.

CROWLEY, LA.—City votes $100,000 for works and electric lights.

BILOXI, MISS.—Bids are wanted by the mayor and board of aldermen until April 7 for boring an 8-in. artesian well approximately 1,000 ft., and constructing a steel tower and tank 140 ft. high, with a capacity of 240,000 gallons, as stated in our advertising columns. Kirkpatrick & Johnson, Engrs., Jackson, Miss.

MEMPHIS, TENN.—Artesian Water Co. has asked permission to sink two new artesian wells in North Memphis.

LATONIA, KY.—Reports state that this village and Central Covington are to sell a franchise for furnishing water.

PIKEVILLE, KY.—We are informed that the Crystal Water-Works Co., W. B. Cox, Pres., is in the market for about 4,000 ft. 4-in. and 3,000 ft. 6-in. cast-iron water pipe, also gate valves, fire hydrants, meters, etc. They will also want two pumps and two boilers, but have not yet decided on the size. No constructing engineer has been employed as yet, but the material must be on the ground within 60 days. The works are to be of the reservoir system and no contract will be let save for material.

RUSSELLVILLE, KY.—Committee, of which J. C. Morton is a member, is to report in April on works.

FINDLAY, O.—The contract for the vitrified pipe for the new water-works has been let to the American Sewer Pipe Co., Pittsburg, Pa., for $59,928, and the contract for laying the same, rock excavations and brick manholes was let to Dull & Hennesy, Arcanum, O., for $54,404.

EVANSVILLE, IND.—State has appropriated $6,500 for improving water supply plant at Southern Insane Hospital in this city.

ST. JOSEPH, IND.—Works under discussion.

JOLIET, ILL.—Bids are asked until April 3 for a steel water tower of 200,000 gallons capacity, as stated in our advertising columns. H. A. Stevens, Cy. Engr.

SHEBOYGAN, WIS.—City will vote on the municipal ownership of works.

DES MOINES, IA.—Reports state that $150,000 will be spent next year by the Des Moines Water Co. in changing their system into one of high and low pressure. Work is stated to have already been begun. Chas. S. Denman is Supt.

FULTON, IA.—Private works proposed.

OTTUMWA, IA.—J. T. Brady, Cy. Engr., writes us that the two franchises before the council for the construction of works—that of the Home Water Supply Co., a local organization, and that of the Iowa Construction Co., of Chicago "have been laid on the table." We are also informed that the council has made a new offer to the City Water Supply Co., New York, N. Y., of $200,000 for their plant. The city had previously made an offer of $150,000, and the lowest price named by the company is $300,000. The old water supply contract expires March 28, and no provision has been made yet for another supply.

MINNEAPOLIS, MINN.—Andrew Rinker, Cy. Engr., has made plans for the readjustment of the distributing water main system. The cost of the work is estimated at $175,000.

ST. CLOUD, MINN.—Legislative bill authorizes this city to purchase works by condemnation proceedings.

TRUMAN, MINN.—Bids are asked until April 7 for material and completing water-works. The following materials are necessary: 350 ft. of 8-in. mains; 1,422 ft. of 6-in.; 6 hydrants, a 47,000-gallon tank on an 80-ft. tower of steel, and brick pump house, 20 × 30 ft. M. B. Haynes, Engr., Mankato, Minn.; N. T. True, Pres. Council.

BROKEN BOW, NEB.—Mayor E. R. Purcell writes us that city has voted bonds for purchase of local water-works.

NEWMAN GROVE, NEB.—Contract for water-works plant complete has been let to the National Construction Co., South Bend, Ind. The contract for putting down 8-in. well was let to O. M. Solso at $12 per day.

WAYNE, NEB.—This city contemplates remodeling the works and making extensive improvements to the system, and has consulted Arnold C. Koenig, Civ. and Hydr. Engr., 514 Bee Bldg, Omaha, Neb., with a view of commencing the work of construction as soon as possible. T. H. Fritts is Mgr.

ALEXANDRIA, S. DAK.—Contract for works here reported as let to the National Construction Co., South Bend, Ind.; $10,000 bonds were issued some time ago for this work.

CARTHAGE, S. DAK.—City to have works.

FARGO, N. DAK.—Improvement of mains desired.

TOWNER, N. DAK.—Works proposed.

MEETEETSE, WYO.—Town votes for $10,000 works.

GREAT FALLS, MONT.—We are informed that bids are asked until March 23 for 18,120 ft. 6-in. and 4,000 ft. 8-in. c.-i. pipe, and 9,800 lbs. special castings, f. o. b. at Great Falls. Bids for this material were received March 9 by C. W. Swearingen, Cy. Engr., but were considered too high and were rejected and the work readvertised. The itemized bids received March 9 will be found under Contract Prices.——The city will shortly call for bids for the following approximate quantities of water-works supplies: 40 fire hydrants, two 2½-in., and 1 steamer nozzle, 6-in. connection; 20 6-in. gate valves; 48-in. gate valves; 18,000 lbs. pig lead; 1,600 lbs. jute.

HAVRE, MONT.—City will probably put in $20,000 works.

HELENA, MONT.—The U. S. Circuit Court of Appeals has decided that the city can build and operate its own water-works. The Helena Water-Works Co. had sought to restrain such action, claiming its contract with the municipality had been violated.

CARTHAGE, MO.—We are informed that owing to the unsettled condition of its franchise the Carthage Water Co. is doing nothing about its proposed filter plant. Lew. O. Brown, Supt.

EUREKA SPRINGS, ARK.—Improvement of the water supply by building additional dam is proposed, at cost of $6,000.

GEARY, OKLA.—Bids are asked until March 25 for constructing works, for which $52,000 of bonds was recently voted. C. L. Olds, Fort Wayne, Ind., is Cons. Engr., and A. T. Kruse, Mayor.

COLORADO SPRINGS, COLO.—We are informed that the council has authorized the city clerk to call for bids until March 23 for constructing the proposed high line reservoir. The estimated cost of the dam is $12,000, and it is to have a capacity of 18,000,000 gallons, an area of 5.6 acres under high-water line and a drainage area of 300 acres. An ordinance has also been introduced for an issue of $409,000 of bonds for the Seven Lakes Reservoir and water main extensions. E. W. Case, Cy. Engr.

DEBEQUE, COLO.—J. S. Swan writes us that no definite steps have been taken in regard to works in this town.

TACOMA, WASH.—Norton C. Taylor, Cy. Engr., writes us that bids will be received about April 10 for 4,000,000-gallon reservoir for new "middle service" and for 4,000 ft. 16-in. and 3,000 ft. 18-in. wooden mains connecting with the same. Two wells are to be drilled and cased, in addition to test well recently completed, and air-lift apparatus to operate all wells is to be installed.

ADAMS, ORE.—We are informed that this city is considering the matter of works and is seeking for information as to the cost of installing a system. Population, 400. B. A. Marquis is Mayor.

DAYTON, ORE.—City works contemplated.

NORTH YAMHILL, ORE.—Gravity works discussed.

THE DALLES, ORE.—D. W. Cummings, Seattle, Wash., has been engaged to make estimates of cost for city water system.

SAN DIEGO, CAL.—City engineer has made the following estimate of cost for improving water system: 16-in. c.-i. pipe and 12-in. pipe, Fifth St., $23,678; 12-in. and 10-in. c.-i. pipe, 30th St.; 1,008 ft. 10-in. pipe on 30th St., $2,358; 26-in. wood pipe with 4-in. service, University Ave., $27,813; 28-in. wood pipe, University Heights reservoir to intersection of El Cajon Ave. and Park Boulevard, and 18-in. wood pipe, University Heights reservoir to Ohio St., $18,539; 8-in. c.-i. pipe, 25th St. and Grant Ave., $8,588; 10-in. c.-i. pipe, Juniper St., $9,167; La Jolla pipe line, $4,667; 66,936 lin. ft. 4-in. c.-i. pipe, including cost of pipe, labor, specials, etc., $51,344; total, $200,000.

ALEXANDRIA BAY, ONT.—Reports state that a $70,000 water and drainage system is to be installed here.

TORONTO, ONT.—Bids are asked until May 12 for the erection of one 15,000,000-gallon triple expansion flywheel pumping engine, as stated in our advertising columns. Thomas Urquhart, Mayor, Chn. Bd. Control.

MONTREAL, QUE.—The water committee has ordered plans made for the widening of the old aqueduct from its present width of 50 ft. to 75 ft. The aqueduct is about 5 miles long.

PORTAGE LA PRAIRIE, MAN.—This place will vote on the matter of works.

SLOCAN, B. C.—The cost of works for this year has been estimated at $9,549.

BONDS.—Mansfield, Mass., is asking leave to issue $10,000 water main extension bonds. See item elsewhere in this column.——Waterbury, Conn., seeks to issue $100,000 bonds for high service water system.——Buffalo, N. Y., is asking leave to issue bonds for pure water supply.——Jamestown, N. Y., through the city treasurer, will receive bids until March 20 for $600,000 water bonds.——Wayland, N. Y., will vote on issue of $25,000 of bonds for establishing water-works.——Sewickley, Pa., will receive bids until March 20 for $60,000 water bonds.——Barton Heights, Va., will issue $10,000 of bonds for installing water-works and sewerage.——East Lake, Ala., is considering $100,000 water-works bond issue.——Smithville, Ga., is to issue bonds for artesian well. See item elsewhere in this column.——Allegan, Mich., is to issue $26,000 water-works improvement and factory bonds.——Bangor, Mich., will issue $25,000 for works and lighting plant.——Minneapolis, Minn., is seeking to issue $100,000 bonds for water supply improvement.——Broken Bow, Neb., votes to issue $13,900 bonds for purchase of water-works.——Plainview, Neb., may vote on bonds for water-works.——Bridgewater, S. Dak., has voted on $10,000 bonds for water-works construction.——Carthage, S. Dak., has voted bonds for water-works.——Manchester, S. Dak., has voted on bonds to sink artesian wells——Meeteetse, Wyo. has voted to issue $10,000 water-works construction bonds.——Floresville, Tex., votes April 22 on $18,000 bonds for constructing water-works and electric lights.——Hobart, Okla., votes March 23 on $15,000 bonds for water-works and $20,000 for sewerage.——Geary, Okla., has voted $52,000 water-works bonds. See item elsewhere in these columns.——Saratoga, Wyo., will receive bids until March 31 for $20,000 water bonds. R. W. Dyer is Town Clk.——Prescott, Ariz., may vote on $100,000 bond issue for water and sewer extension.——The Oneida Irrigation District, Adelbert Henderson, Pres., Preston, Idaho, is asking bids until May 15 for $271,500 of bonds.——San Diego, Cal., may vote on $500,000 bond issue for improving water-works and other public utilities.——Santa Barabara, Cal., proposes to vote on $280,000 bond issue for extending water system and for other improvements.——Phoenix, Ariz., W. A. Faush, Cy. Engr., writes that election is called for April to vote on water-works bond issue.——Bisbee, Ariz., may vote April 15 on $20,000 bonds for constructing water-works.——Stratford, Ont., votes $98,000 of bonds for purchase of water-works.

NEW COMPANIES.—Bangor Water Co., Bangor, Me., seeks incorporation with $600,000 capital, to furnish drinking water only. F. W. Ayer, S. K. Stetson, J. P. Bass.——Kanawha Water & Light Co., Charleston, W. Va.; $1,000,000; Richard Elkins, Washington, D. C.; W. F. Sadler, Jr., Trenton, N. J.——Crystal Water-Works Co., Pikeville, Ky.; $15,000; W. B. Cox, Williamson, W. Va. See item under Pikeville, Ky., in this column.——Brown County Irrigation Co., Brownwood, Tex.; W. W. Cameron, Waco, Tex.; Geo. H. Ingram, Brownwood.——Houston Heights Water Co., Houston, Tex.; $50,000; O. M. Carter, J. A. Milroy, C. A. McKinney.——Coalinga Consolidated Water Co., Selma, Cal.; $50,000; C. A. Teffer, H. H. Welsh.——Paloverde Irrigation & Improvement Co., Los Angeles, Cal.; $25,000; Geo. S. Whaley, James V. Douthitt, A. M. Hinckley.——Parley's Canyon Surplus Ditch Co., East Mill Creek, Utah; $3,360; Jos. C. Crismon, Jas. Young, Jas. M. Fisher, Jr.——Casa Grande Valley Water Users Association, Florence, Ariz.; $375,000; D. C. Stevens, Florence; Dr. Geo. N. Brockway, Kenilworth, Ariz.

SEWERAGE

BAR HARBOR, ME.—At the town meeting it was voted to construct a sewer, to cost about $8,350.

SANFORD, ME.—System being discussed.

BEVERLY, MASS.—The finance committee will report favorably on the $100,000 appropriation for system.

BOSTON, MASS.—The metropolitan water and sewerage board has recommended a system of separate sewers.

EASTHAMPTON, MASS.—The sum of $30,000 has been appropriated for sewer extension.

GLOUCESTER, MASS.—Sewerage system discussed.

HANOVER, MASS.—A sewerage appropriation of $1,500 has been made.

HUDSON, MASS.—Snow & Barbour, Engrs., Boston, Mass., write us that plans and report of sewerage and sewage disposal are completed, and the matter will come before the meeting this month.

LANCASTER, MASS.—System being discussed.

MARLBORO, MASS.—An engineer's estimate for 2½ miles of pipe sewer is $40,000.

SUNDERLAND, MASS.—A sewer will be built through Main and Bridge Sts. at cost of about $6,000.

SALEM, MASS.—The Salem aldermen have favored the deep-sea sewerage disposal plan, and have appropriated $90,000 for surveys and beginning the work.

NAUGATUCK, CONN.—A general sewerage system and disposal plant is being discussed.

BROOKLYN, N. Y.—Bids are asked until March 25 for constructing sewers in Foster Ave., Flatbush Ave., East 15th St., Caton Ave., Parada Place and Ocean Parkway, in the borough of Brooklyn, as more fully described in our advertising columns. J. Edward Swanstrom, Pres. Borough, Municpal Bldg.

PENN YAN, N. Y.—Knight & Hopkins, Engrs., Rome, write us that there will be 15 miles of sewers. Plans will be submitted in April.

PORTCHESTER, N. Y.—F. S. O'dell, Engr., writes that no action has been taken yet in regard to constructing system.

TROY, N. Y.—Bids are asked by board contract and supply, City Hall, room 21, until March 27, for constructing 6,450 ft. 8 to 18-in. sewer pipe and 700 ft. 6-in. laterals. J. M. Riley, Clk.

PLAINFIELD, N. J.—The proposed sewerage system will cost in the neighborhood of $65,000. Cast-iron pipe will be used. Maximum cut will be 22 ft.

COATSVILLE, PA.—H. G. Boone, Cy. Engr., writes us that $20,000 will be expended on extension of sewers.

PITTSBURG, PA.—The council has refused to appropriate $95,000 for extending the sewer of the Negley run to a point below the proposed government dam at the Brilliant pumping station.

WILMINGTON, DEL.—Consulting Engineer Hatton writes that the bill for authority to create loan for the Ninth Ward sewer is in legislature, with probability of passage.

WHEELING, W. VA.—Bids are asked by board public works until March 23 for furnishing brick sewer pipe and stone and concrete curbing.

DEMOPOLIS, ALA.—J. G. Whitfield, Engr., writes us that he has prepared plans for a nine-mile sewer system.

LOUISVILLE, KY.—The question of a sewerage system is being agitated by H. Goetz, New Albany.

ALLIANCE, O.—It is said that a sewer for Miler St. has been introduced in the council. C. O. Silver, Cy. Clk.

BUCYRUS, O.—The city clerk has been instructed to advertise for bids for the Rogers and East St. sewer. Cost is estimated at $5,000.

CINCINNATI, O.—Bids are asked by board of public service until April 2 for constructing Eastern Ave. sewer. G. F. Holmes, Clk.

CINCINNATI, O.—The sewer ordinance for Mayfield, Ross, Warsaw and Glenway Aves. has passed the council; also paving with brick Schorr Alley. E. Henderson, Cy. Clerk.

COLLINWOOD, O.—J. B. Davis & Son, Engrs., 242 The Arcade, Cleveland, write us that no improvements will be made until after the spring election.

COLUMBUS, O.—The ordinance providing for main trunk relief sewer has passed; also eight 27-in. sewers in various streets.

LAKEWOOD, O.—Bids are asked until March 28 for constructing a storm sewer between Belle and St. Charles Aves. J. French, Clk.

INDIANAPOLIS, IND.—Engineer Nelson is preparing plans for brick sewers costing $70,000. Bids to be asked in April.

DETROIT, MICH.—William Blanck was the lowest bidder on four sewers, contracts for which were opened in the department of public works yesterday, his portion aggregating $18,000. William Forath got three at $7,900; James Laffeld, one for $611; W. H. Whittaker, two at $2,800, and J. A. Mercier, one for $400.

CHICAGO, ILL.—The inadequacy of the sewer system is being discussed.

PEORIA, ILL.—The cost of district No. 1 sewer is estimated at $33,000.

ROCKFORD, ILL.—Final action will be taken March 16 on the Kent Creek sewer, the cost of which is $54,443. It will be about 4½ miles long.

GREEN BAY, WIS.—System being discussed.

BURLINGTON, IA.—Engineer Steece is preparing plans for the Stony Lonesome sewer.

DUNKIRK, N. D.—H. A. Holstein, Asst. Engr., writes that the council has ordered a sewerage system for the First and Fourth Wards.

ST. LOUIS, MO.—The Blackstone district sewer will cost complete $335,000.

SAN FRANCISCO, CAL.—The Sixth St. sewer will be reconstructed at a cost of $50,000, and Third St. sewer will be extended at a cost of $80,000.

LEWISTON, IDAHO.—The Normal Hill sewer will be eight miles long, of from 8 to 16-in. pipe, and cost $50,000. There will be 25,000 cu. yds. of excavation.

TORONTO, ONT.—C. H. Rust, Cy. Engr., writes us that the sewer improvements in Woodbine Ave. have been petitioned against.

BONDS.—Birmingham, Ala., will issue $200,000 worth of bonds.——An issue of $40,000 has been authorized at Troy, N. Y.——A issue of $200,000 will be voted upon next fall by St. Joseph, Mo.——Colfax, Cal., is discussing a bond issue of $10,000.——Standish, Mich., will issue water, light and sewer bonds.

GARBAGE DISPOSAL—STREET CLEANING

NEW YORK, N. Y.—All bids recently received for constructing garbage crematory at Fort Slocum, N. Y., have been rejected and new bids ordered to be secured at once.

WATERTOWN, N. Y.—Reports state that bids will probably be received by the health board, March 20, for the collection of garbage.

OMAHA, NEB.—Andrew Rosewater, Cy. Engr., has been looking into the matter of garbage collection and disposal. He will report to the city council.

LOS ANGELES, CAL.—The board of health has asked a conference with the council to adopt another system of garbage collection, and also to plan for the purchase of the present crematory.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

STREETS AND ROADS

PORTSMOUTH, N. H.—The bill appropriating $20,000 for the shore boulevard has passed both houses and been signed by Gov. Bachelder.

LEWISTON, ME.—A road from Wm. H. Brown's property to Duncan's Mountain has been voted upon.

BRAINTREE, MASS.—The sum of $11,669 has been recommended for the construction of Academy St., Bellevue Road, a new stone road and bridges by the committee on appropriations.

BROCKTON, MASS.—Bids are being received by E. A. West, Acting Supt. of Highways, for supplying 50,000 paving blocks.

METHUEN, MASS.—The paving and repairing of various streets with appropriation of $9,500 has been discussed at a meeting of the financial committee.

NEW BEDFORD, MASS.—An appropriation of $50,000 has been discussed for a stone road.

NOANK, CONN.—We are informed that M. A. Juccardy, New London, was to start work March 16 on macadamizing 5,800 ft. and grading 16 ft. of road. Contract awarded last fall for $11,000.

COHOES, N. Y.—Bids are asked until March 25 for paving various streets. H. Van Auken, Cy. Engr.

NEW YORK, N. Y.—Bids are asked by President Bronx Borough, Municipal Bldg., Crotona Park, until March 23 for paving 23,375 sq. yds. with asphalt, 3,800 cu. yds. concrete, excavating 13,725 cu. yds. of earth and 23,325 cu. yds. of rock.

NEW YORK, N. Y.—Nearly $6,000,000 will be spent in paving and repairing the streets in this city during the current year. Of this sum the boroughs of Manhattan and The Bronx will use about $3,000,000; Brooklyn about $2,000,000, and Richmond and Queens the remainder. Bids have already been received and some awards made for paving worth $550,000 in Manhattan, and $800,000 in Brooklyn. Further awards will shortly be made for street work in these boroughs and in The Bronx, Richmond and Queens.

NEW YORK, N. Y.—Bids are asked by President of Bronx Borough, Municipal Bldg., Crotona Park, until March 25, for furnishing and setting 5,000 ft. new curbstone, 4,000 ft. old curbstone reset, 5,800 sq. ft. bridgestone relaid and paving 23,800 sq. yds. with granite block.——Bids are asked by the Aqueduct Commissioners, Room 207 Stewart Bldg., until April 7, for constructing highways and roads in various towns in Westchester county. W. H. Ten Eyck, Pres.

CAMDEN, N. J.—The Camden county board of freeholders, Court House, has introduced ordinance for macadam road from Haddonfield to Gibbsboro.

JERSEY CITY, N. J.—The petition for asphalting Harrison Ave. has been favorably reported on by the street and water board. Cost is $5,000.

MEADVILLE, PA.—Bids are asked until March 25 for paving and curbing in Chestnut and Water Sts., aggregating some 6,825 sq. yds. of paving, and 2,810 lin. ft. of curbing, etc., as stated in our advertising columns. A. C. Pardee, Cy. Clk.

NORFOLK, VA.—The use of 5-in. granite curbing has been adopted. The paving of Union Bridge causeway is discussed. The cost of paving Fourth St. is estimated at $27,000.

McCOMB, MISS.—The sum of $10,000 will be spent for sidewalk improvement.

CRAWLEY, LA.—Mayor Chapins has been authorized to advertise for bids for grading all streets.

PADUCAH, KY.—L. A. Washington, Cy. Engr., writes us that nothing definite will be known about the paving of Second to Fifth St. for a month or more.

BOWLING GREEN, O.—The county commissioners are considering a petition for macadamizing Haskins road.

CELINA, O.—Bids are asked until April 7 for paving about 10,270 sq. yds. on East Livingston St. with paving blocks or bricks. F. H. Kreusch, Village Clk.

CINCINNATI, O.—Kirchner & Co. received $61,000 contract for construction of walls along Erie Canal.——The paving of Court St. may cost $65,000.——Chief Engineer Stanley is preparing plans for macadamizing Grandin Road at $9,400, and paving with brick Dorsey St. at a cost of $13,586.

COLUMBUS, O.—The ordinance providing for paving in various streets has passed. J. D. Barr, Cy. Clk.

COLUMBUS, O.—Cleveland Trinidad Co. received Garfield Ave. paving contract for $12,745, and F. J. Fisher Sullivant Ave. with Hocking Valley block for $11,547.

COLUMBUS, O.—Bids are asked by the board public works, until March 23, for constructing artificial stone sidewalks at Livingston park, and also for 40 streets. J. A. Connor, Clk.——Bids are asked until March 30 for paving John St. with paving blocks or asphalt. C. H. Nauts, Cy. Clk.

DAYTON, O.—Cincinnati St. will be paved with bituminous macadam. Cement sidewalks for Alaska St. has been referred to the council.

FINDLAY, O.—Bids are asked until April 18 for paving with block, grading and sewering Defiance Ave. F. C. Ray, Cy. Clk.

ORRSVILLE, O.—Walnut St. will be improved to the extent of $5,000. P. Marklay has plans.

PORTSMOUTH, O.—A petition for paving Sixth St. is in circulation and will be presented at next meeting.

SALEM, O.—Ordinances for paving New Garden and Howard Sts. and East Broadway have passed the council.

SANDUSKY, O.—Ordinance for branch connecting sewer in Hayes Ave. passed. A. M. Wagner, Cy. Clk.

TOLEDO, O.—It is stated that bids will be readvertised for paving Auburn Ave.

TOLEDO, O.—Bids are asked until April 13 for paving Detroit and Woodruff Aves. with asphalt or blocks. C. H. Nauts, Cy. Clk.

CHARLESTON, IND.—At a special election, the building of 18 miles of gravel road will be decided upon.

DELPHI, IND.—Bids will be asked shortly for constructing roads. Address Auditor, Carroll county.

EVANSVILLE, IND.—Bids are asked until April 18 for paving 22,000 sq. yds. with asphalt and 18,000 sq. yds. with brick. A. Pfafflin, Cy. Engr.

FORT WAYNE, IND.—The paving of Broadway and Calhoun St. is being discussed.

INDIANAPOLIS, IND.—Plans will be prepared for the Fall Creek and Pleasant Run boulevards. Cost estimated at $100,000.

MARION, IND.—Plans and specifications will be prepared for paving Boots St. with asphalt and 5-ft. cement walks. Brick will be used for paving 37th St. Bids will be readvertised for paving Adams St. with brick and cement sidewalks.

NEW CASTLE, IND.—Bids will be asked soon for brick and asphalt paving. Address Town Board.

WILLIAMSPORT, IND.—W. H. Gemmer, Supt. and County Comr., will let a contract on April 6 for building 10¾ miles of gravel road; estimated cost, $27,000.

BAY CITY, MICH.—North Henry St. may be paved this year. Linn, Litchfield and Washington Sts. are being considered.

GRAND RAPIDS, MICH.—The extension of Hilton St. is being discussed.

GRAND RAPIDS, MICH.—L. W. Anderson, Cy. Engr., writes us that the following bids were received March 13 for paving South Division to South East St. with asphalt blocks; all local bidders: Luton Eng. & Construction Co., $56,225; Kloote & Vander Veen, 842 E. Fulton St., $54,940 (contract awarded); Jas. McDermott & Son, 315 Bowery, $57,700; Fred. Gilner, 451 Grandville Ave., $57,000.

PONTIAC, MICH.—Wm. J. Lister, Cy. Engr., writes us that bids will be opened the first part of April for paving 10,471 sq. yds. Estimated cost is $26,507.

CHICAGO, ILL.—The paving of Archer Ave. with asphalt has been recommended by the committee on streets and alleys.

KEWANEE, ILL.—The paving of Main St. is being discussed.

ROCK ISLAND, ILL.—W. Treichler, Cy. Engr., writes us that council has passed ordinances for paving 15,000 sq. yds. on 15th St. with brick.

LA CROSSE, WIS.—J. Vollmer, St. Comr., writes that paving project has been voted down.——The sum of $200,000 has been divided for improvements.

MILWAUKEE, WIS.—A driveway along the lake shore is being discussed. Alderman Wittig is interested.

DES MOINES, IA.—Asphalt pavement will be laid in 13th St. Alderman Higgins is a member of paving and sewer committee.

MARSHALLTOWN, IA.—Wm. Brennen, Cy. Engr., writes us that the proposed new paving is not finally determined upon by the council.

RED OAK, IA.—Brick paving will soon be ordered.

FORT RILEY, KAN.—Bids are asked until April 6 for paving with brick. Capt. G. O. Cress, Q. M.

LEAVENWORTH, KAN.—Cherokee St. will be paved with brick at cost of $6,539. Walnut and Cheyenne Sts. will also be paved, the latter with macadam.

TOPEKA, KAN.—The council has voted to pave 39 streets.

OMAHA, NEB.—The paving of 24th St. is being discussed.

ST. JOSEPH, MO.—Capt. B. F. Buzard, Bd. Pub. Wks., has stated that contracts will soon be let for asphalt and brick paving and artificial sidewalks.

DALLAS, TEX.—The paving of Main St. is now before the property owners on that street.

GALVESTON, TEX.—The new budget provides $40,000 for street improvements. Strand and Market Sts. may be paved this year. Wm. T. Austin is Pres. Bd. Comrs.

YOAKUM, TEX.—Bonds to the amount of $10,000 for street improvements may be issued.

GUTHRIE, OKLA.—The Barber Asphalt Co. received contracts which will result in an expenditure of $200,000.

CHICKASHA, I. T.—A number of streets will be paved with brick.

NORTH YAKIMA, WASH.—C. G. Weinds, Cy. Engr., writes us that legislature has appropriated $13,500 for new road.

SPOKANE, WASH.—Plans have been completed for paving Monroe St. with brick.

SPOKANE, WASH.—Barber Asphalt Co. has contract for concrete sidewalks at $2,032.

WALLA WALLA, WASH.—Mayor Hunt is said to have stated that $100,000 would be spent on paving.

PORTLAND, ORE.—It is stated that several streets are to be paved with macadam and Davis St. with brick.

BERKELEY, CAL.—Reports state that the street committee has recommended the macadamizing of several streets.

BOISE, IDAHO.—It is stated that the city clerk will advertise for bids for paving 8th St. with brick.

OGDEN, UTAH.—A. F. Parker, Cy. Engr., writes us that J. P. O'Neill received the contract for street work for $55,000.

CHATHAM, ONT.—The paving of Victoria Ave., King, West and Fifth Sts., with asphalt, is being discussed.

BARRIE, ONT.—About 10 miles of cement walks will be constructed, ½ of which will be done this year.

KINGSTON, ONT.—The paving of nine blocks is being discussed. The cost is estimated at $32,000.

MONTREAL, QUE.—The road committee has awarded the following contracts: The opening of Napoleon and Fortin Sts., and widening of Robin, Amherst, Elgin, Mount Royal, Mackay and St. Timothee Sts., at cost of $157,609.

MONTREAL, ONT.—Something like $325,000 has been appropriated by the Finance Comr. for paving and sidewalks.

BONDS.—Rensselaer, Ind., has been authorized to issue gravel road bonds.——Paving bonds for $25,000 will be issued by Essexville, Mich.——The proposition of issuing $400,000 for good roads is being discussed at Dallas, Tex.

MANUFACTURING PLANTS.

LYNN, MASS.—The General Electric Co. will erect a large plant, 800 × 300 ft., for the manufacture of turbine engines.

MEDFORD, MASS.—The Boston Steel & Iron Co. 1017 Paddock Bldg., Boston, will erect a steel plant at cost of $40,000. C. E. Phenix is Treas.

SPRINGFIELD, MASS.—Work will soon start on the Automatic Needle Co.'s new plant. G. A. Manwaring is Vice-Pres.

CAMDEN, N. J.—The National Vise & Tool Co., 122 North Ninth St., contemplates erecting new plant.——West Bros. Co. will erect wagon factory.

HARRISBURG, PA.—The American Iron & Tube Co. will erect blacksmith shop, boiler shop and warehouse.——The Harrisburg Mfg. & Boiler Co.'s new plant will be of brick and steel, one story, and 40 × 300 ft.

PHILADELPHIA, PA.—Wm. Steel & Sons, 16th and Arch Sts., received contract for erecting 7-story brick addition, 50 × 100 ft., to mill at Lawrence and Master Sts., for Drueding Bros.——C. Balderston, Arch., 411 Walnut St., is preparing plans for 6-story brick factory, 112 × 265 ft., at 41st and Poplar Sts., for Cunningham Piano Co., and costing $100,000.——J. T. Lewis & Bros. Co., 2707 East Cumberland St., is receiving bids for 3-story brick and steel fireproof oxide mill, 35 × 100 ft.——Hale & Kilburn Mfg. Co.'s new plant will be U-shaped, four stories, 103 × 173 × 260 × 276 × 70 × 70 ft., 1-story machine shop, 54 × 70 ft., and 1-story boiler house, engine room and stable, 181 × 32 ft. Plans by Lockwood, Green & Co., Engrs., Boston, Mass.

ST. CLAIR, PA.—The Baltimore & Ohio R. R. Co. may erect a repair shop here.

SHARON, PA.—Merchants of this place may erect a $50,000 arcade store.——The Standard Engine Co., Ellwood City, has increased its stock to $300,000 to erect a foundry.

BALTIMORE, MD.—The Symington Co. will erect factory for manufacturing railway supplies. A. H. Walton is interested.——Plans for the Broadbent-Dorsey Mantel Co.'s factory at President and Aliceanna Sts., are nearing completion.

WASHINGTON, D. C.—A. P. Clark, Arch., 605 F St., writes us that the Foundry M. E. Church will be 110 × 129 ft., costing $120,000 and require low pressure steam heat, tubular boilers, blower and gas engine.

NORFOLK, VA.—The J. G. Wilson Mfg. Co. will erect a structural steel, iron and woodwork plant. J. Godfrey, Pres., New York.

COLUMBIA, S. C.—The Lockhart Cotton Mills has increased stock to $1,300,000 for the purpose of adding 50,000 spindles. J. C. Carey is Pres., Spartanburg.

DILLON, S. C.—The Haurer Cotton Mills will be equipped with 5,000 spindles. Bids for furnishing machinery will be wanted shortly. W. M. Haurer is Treas.

GREENVILLE, S. C.—The Monaghan Mill will double its capacity by adding 30,000 spindles.

ATHENS, GA.—The Hodgson Cotton Co. will erect a fertilizer factory.

ROSSVILLE, GA.—The Park Woolen Mills will double its capacity by erecting brick building, 50 × 300 ft., and installing 75 new looms at cost of $100,000.

ENSLEY, ALA.—J. E. Hollingsworth received the contract for a brick building, 100 × 117 ft., from the Empire Plow Co. The sum of $10,000 will be spent on electrical machinery.

BESSEMER, ALA.—Reports state that a $300,000 iron plant will locate at this place.

OPELIKA, ALA.—It is stated that a syndicate, through Messrs. Street & Roberts, North Alabama, will erect a large refining mill and soap factory.

NEW ORLEANS, LA.—The International Chemical Co. will erect a large factory.

CHATTANOOGA, TENN.—The Herron-Brady Pump & Foundry Co.'s plant will probably be erected on Boyce St. C. Herron is one of the incorporators.

LOUISVILLE, KY.—The Hope Worsted Mills will erect a 3-story building, 80 × 200 ft., at cost of $50,000. Contracts will be let shortly. New machinery will be installed. J. T. Moore is Treas.

AKRON, O.—Carmichael & Co. has contract for 60 × 40 ft. addition to Williams Foundry Machine Co.'s plant.——The Akron Brass Co. will erect brass foundry. A. L. Lampert, Cleveland, will have charge of construction.

BEREA, O.—The Ray Automatic Machine Co., 5 Water St., Cleveland, will erect plant and manufacture nuts, bolts and automatic fenders.

CUYAHOGA FALLS, O.—E. M. Young will erect a cut-glass factory.

DAYTON, O.—The Marbeleithic Co., Wayne Ave. and State St., has bought property on Longworth Ave. and will erect a 2-story brick factory, 60 × 190 ft. The construction of the foundation has already commenced.

CLEVELAND, O.—The Duplex Mfg. Co. will erect foundry for the manufacture of castings, steel work, etc. F. H. Jackson is Pres.

CINCINNATI, O.—The Herman Goepper Co. may expend $1,000,000 in erecting malt plant on the Banner Brewery site. Concrete may be used. E. Goetter is Pres.——Plans are being drawn by the Baltimore & Ohio R. R. engineers for new warehouse and freight station to be erected at Second and Smith Sts., to cost $350,000.

MARYSVILLE, O.—Beecher & Turner will enlarge old foundry building and manufacture iron street crossings and elevator weights.

MASSILLON, O.—The Hess-Snider Co. contemplates the erection of a new foundry building, 200 × 60 ft., and of brick construction.

INDIANAPOLIS, IND.—The city will probably erect asphalt plant at cost of from $6,000 to $10,000. The City Engineer and board of public works are working on plan.

KOKOMO, IND.—The Pittsburg Plate Glass Co. will triple the capacity of its plant and erect building covering 60 acres. Contract will be let when plans completed. Address, Secretary.

HOUGHTON, MICH.—The laundry of Meedham Bros. has been destroyed by fire, entailing a loss to building and machinery of $250,000.

MILWAUKEE, WIS.—Pawling & Harnischfeger, crane and hoist builders, Milwaukee, expect to move from their present location on Clinton, Oregon, Barclay and S. Water Sts. to a new site just purchased on National and 38th Aves. The property acquired is 19½ acres. Work will commence at once on the new plant, which will be strictly modern in every detail. The company plans at the present time are simply to increase its output by the additional buildings to be erected on the new site, though in time it is the intention to transfer their entire works to this new location.

AUSTIN, TEX.—J. H. Kirby, Pres. Kirby Lumber Co., has stated that six paper mills would be built in Texas.

BAY CITY, TEX.—The American Bridge Co.'s plant here was recently destroyed by fire with loss of $200,000.

DUBLIN, TEX.—A cotton mill is being discussed. Maj. R. B. Spencer is interested.

SEATTLE, WASH.—The Pacific Coast Co. will erect 2-story office building, power house and coal bunkers, at cost of $135,000; also seawall and docks at cost of $140,000.——J. Rawson will erect a salmon plant at Cape Nome, at cost of $200,000; also cannery to be built.——The Seattle Iron & Steel Co. will build furnaces at this place and rolling mill, with 100 tons daily capacity. H. Hemrich is Pres.

TACOMA, WASH.—The Demming-Borry Co.'s pulley mfg. plant will be enlarged at cost of $75,000. Electric plant with two boilers to be installed.

WHATCOM, WASH.—G. Wegeber, representing the Ebthorpe Brewing Ass'n, Pittsburg, is looking for a site for brewery.——Balfour, Guthrie & Co. will, it is said, spend $1,000,000 on large cement plant.

LOS ANGELES, CAL.—Large car shops will be erected on Seventh St. by Mr. Huntington.

RIVERSIDE, CAL.—The Riverside Foundry & Machine Shops received the contract for erecting two mills for the Pacific Clay Co.

SAN MIGUEL, CAL.—It is stated that the United Railroads Co. will erect car shops. The cost, with machinery, will be about $200,000.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

LEWISTON, IDAHO.—Swank & Drissell will order machinery at once, for shingle mill, to have capacity of 150,000 a day.

SEVEN ISLANDS, QUE.—Bids are asked by Geo. F. Hardy, Arch. and Engr., 309 Broadway, New York, for furnishing the material and for building a plant for the manufacture of paper pulp at Seven Islands, for the North Shore Power Ry. & Navigation Co., 7 W. 22d St., N. Y., as stated in our advertising columns. We are informed that this is a very large piece of work. F. W. Spice, Gen. Mgr., New York.

CONTRACT PRICES.

RIVER IMPROVEMENTS.—Buffalo, N. Y.—The following bids were received by Francis G. Ward, Comr. Pub. Wks., on Feb. 24 for widening, deepening and straightening the Buffalo River and Cazenovia Creek; (A) is price. a cu. yd. in place for excavation, material other than bed rock; (B) price a cu. yd. in place for shale rock excavation near Cazenovia St., in Cazenovia Creek, including disposal of rock; (C) gross sum for constructing controlling weir on Buffalo River near city line, including pile protection, filling riprap and other work; (D) price a lin. ft. for pile and sheet protection at junction of creeks, and on cut-off from Buffalo River to Lake Erie; (E) gross sum for construction of the bulkhead protection of outlet channel in Lake Erie, excepting riprap filling; (F) price a cu. yd. for riprap filling along outlet channel bulkhead:

Bids Received at Buffalo, N. Y., Feb. 24, 1903, for Widening, Deepening and Straightening Buffalo River and Cazenovia Creek.

Completion in Two Years.

Bidder.	Section No. 1. A., 220,000 yds.	D., 960 yds.	E., gross, yds.	F., 9,000 yds.	Total.	Sec. No. 2. A., 1,859,000 yds.	D., 450 yds.	Total.	Sec. No. 3. A., 1,040,000 yds.	C. gross, yds.	D., 100 yds.	Total.	Sec. No. 4. A., 316,000 yds.	B., 9,900 yds.	D., 100 yds.	Total.
Buffalo Dredging Co.	$0.16¾	$3.50	$21,000	$1.25	$72,460	$0.19¼	$3.50	$359,433	$0.21¼	$12,500	$3.50	$233,850	$0.22¾	$1.50	$3.50	$87,090
Lake Erie Dredging Co.	.17½	4.00	22,000	1.25	75,590	.20	4.00	373,000	.21⅝	14,800	4.00	237,760	.21⅝	1.50	4.00	82,874
James B. Donnelly	.20	3.00	20,000	1.40	79,480	.21	3.00	391,740	.23	13,000	3.00	252,500	.23½	1.60	3.00	90,400
Thomas Brown	.17¾	3.96	23,500	1.55	80,301	.19⅞	3.96	371,258	.21⅞	12,900	3.96	240,796	.23½	1.50	3.96	89,506
The L. P. & J. A. Smith Co.	.19	3.25	20,000	2.00	82,920	.21¼	3.25	401,148	.24	15,000	3.25	264,925	.27	2.25	3.25	107,920
Henry P. Burgard	.15	7.50	25,000	2.00	83,200	.15	7.50	282,225	.17½	20,000	7.50	202,750	.17½	2.50	7.50	80,800
Frank V. E. Bardol	.20	4.80	26,696	1.20	86,164	.20	4.80	373,930	.17¼	17,635	4.80	197,515	.17¼	3.00	4.80	84,690
McDonough & Stabell	.21	10.00	34,500	2.00	108,300	.21	10.00	394,890	.14½	24,500	10.00	176,300	.14	1.75	10.00	62,565
Mosler & Summers	.24	7.00	41,210	1.50	114,250	.16¾	8.00	314,582	.18	15,790	8.00	203,700	.19½	1.50	8.00	77,270
McKeon & Johnson	.25	7.00	40,000	1.50	115,220	.17	7.00	319,180	.18½	14,500	7.00	207,000	.19	1.75	7.00	78,065
Completion in Three Years.																
Buffalo Dredging Co.	.16	3.50	21,000	1.25	70,810	.18½	3.50	345,490	.20½	12,500	3.50	226,050	.22	1.50	3.50	84,720
Thomas Brown	.16¾	3.90	22,000	1.50	76,094	.19	3.90	354,965	.21	12,900	3.90	230,790	.22½	1.50	3.90	86,340
James B. Donnelly	.19	3.00	20,000	1.40	77,280	.20	3.00	373,150	.22	13,000	3.00	242,100	.22½	1.60	3.00	87,240
The L. P. & J. A. Smith Co.	.18	3.25	20,000	2.00	80,720	.20⅞	3.25	389,529	.22	15,000	3.25	244,125	.25	2.25	3.25	101,600
McDonough & Stabell	.20	10.00	34,500	2.00	106,100	.20	10.00	376,300	.14½	24,500	10.00	176,300	.14	1.75	10.00	62,565

PAVING, ETC.—Brooklyn, N. Y.—The following bids were received by the President of the Borough of Brooklyn on March 4 for grading and paving with asphalt in Albemarle Road and Powell St.: Albemarle Road, lowest bidder, Uvalde Asphalt Paving Co., 6,260 sq. yds. asphalt at $1.40 per sq. yds., 870 cu. yds. concrete at $4.90 a yd.; 4,670 cu. yds. earth excavation at 30 cts. a yd., 3,020 lin. ft. concrete curb at 50 cts a ft., 14,500 sq. ft. cement sidewalk at 18 cts., and 60 cu. yds. concrete retaining walls, at $5 a yd.; total **$18,668:**

Bids Received at Brooklyn, N. Y., March 4, 1903, for Grading and Paving with Asphalt. Powell St.

Bidder.	Asphalt, pavement, 11,493 sq. yds.	Concrete 1,975 cu. yds.	New curb, 6,579 lin. ft.	Man-holes, 25 each.	Earth excava-tion, 3,800 cu. yds.	Cement sidewalks, 26,372 sq. ft.	Total.
Uvalde Asphalt Paving Co.	$1.50	$5.25	$0.90	$5.00	$0.40	$0.18	$39,921
Eastern Bermudez Asphalt Paving Co.	1.21	5.40	.90	5.00	.40	.23	38,203
Cranford Co.	1.48	5.75	.90	5.00	.40	.22	41,734
Interstate Paving Co.	1.42	5.25	.90	5.00	.25	.18	38,432

CAST-IRON WATER PIPE.—Great Falls, Mont.—The following bids were received by the council on March 9, and later rejected, the bids being considered excessive, for furnishing cast-iron water pipe, and special castings, prices, f. o. b. Great Falls; new bids will be received until March 23, as stated in the Water-Works columns of this issue: the 6-in. pipe is 34 lbs. to the ft., and 8-in. 48 lbs.: (1) bid of Great Falls Iron Works, Great Falls, Mont.; (2) Crane-Ordway Co., St. Paul, Minn., (3) U. S. Cast-Iron Pipe & Foundry Co., St. Paul, Minn.; C. W. Swearingen is Cy. Engr.:

		1.	2.	3.
6-in. cast-iron pipe	18,120 lin. ft.	$51.65	$50.00	$50.95
8-in. " " "	4,000 " "	51.35	50.00	50.95
Castings	9,810 lbs.	.03¾	.03½	.03¾
Total		$21,208	$20,545	$20,954

PIER WORK.—Duluth, Wis.—Bids were received by Capt. D. D. Gaillard, U. S. Engrs., at Duluth, on March 9, 1903, for improving the harbor at Duluth and Superior Entry, Superior, Wis; the amount proposed for this work is $250,000; all bids are considered too high; (1) South Pier, complete, 43,000 cu. yds. of concrete; (2) excavating or refilling sand from bottom of pier trench, 5,000 cu. yds.:

	1.	2.	Total.
Lake Superior Con. & D. Co., Duluth	$7.44	$0.30	$321,420
Porter Bros, Duluth	9.10	.50	393,800
Butler Bros., St. Paul, Minn.	10.15	1.00	441,450
Hugo & Timbs, Duluth, Mnn.	8.65	.50	374,450

DREDGING AND ROCK EXCAVATION.—Portland, Me.—The following bids were received by Maj. S. W. Roessler, U. S. Engr., on March 12, 1903, for dredging and rock excavation in Carver's Harbor; advertised in Engineering News: (1) 127,000 cu. yds. dredging, scow measurement, (2) removing boulders exceeding 5 tons, (3) removing 24½ cu. yds. of ledge: Simon J. Donovan, Boston, (1) 20 cts. a cu. yd., (2) $10 a ton, (3) $500 (lump sum); Eastern Dredging Co., Portland, (1) 14¾ cts., (2) $5, (3) $563.

STREET IMPROVEMENT.—New York, N.Y.—Bids were received as follows by the Borough President on March 7 for regrading, resetting curb, reflagging, relaying crosswalks, rebuilding receiving basins, retaining wall, etc., in Tremont Ave., from Third Ave to Boston Road:

PAVING.—Montpelier, Ind.—The contract for paving Franklin Ave. with Logan blocks, laying cement sidewalks and curbs has been awarded to the Hoosier Construction Co. at **$8.97 per lin. ft. and $3 per yd. for extra excavation.**

SEWERS.—New York, N.Y.—The following bids were received by the Borough President on March 10 for building a sewer in Audubon Ave., between 175th St. and Fort George Ave.; A. Kelly's bids in two classes of sewer differed, Class II. being at $5.90 a ft.:

Bids Received at New York, N.Y., March 10, 1903, for Constructing a Sewer in Audubon Ave. (Bronx).

Bidder.	Sewers, 42×28-in. brick, 1,617 lin. ft.	15-in. pipe, 1,810 lin. ft.	12-in. pipe, 375 lin. ft.	Receiving basins, 16 each.	Rock exca-vation, 6,825 cu. yds.	Lumber 5 M. ft.	6 M. ft.	Total.
F. Thielman, Jr., 147 E. 125th St.	$7.50	$5.50	$5.00	$200.00	$3.00	$20.00	$25.00	$47,883
W. E. Welsh, 1600 Marcher Ave.	7.00	4.00	4.00	150.00	3.00	.....	.....	42,559
W. J. Ford, 17 West 103d St.	10.00	10.00	3.00	200.00	2.00	.....	30.00	52,425
F. V. Smith Contracting Co., 147 E. 125th St.	7.50	4.00	2.00	170.00	3.20	.....	.....	44,678
Anthony Kelly, 215 W. 125th St.	5.35	4.25	2.00	190.00	4.50	50.00	50.00	51,408
W. J. Moore, 170 E. 89th St.	5.50	3.00	2.00	150.00	3.75	.....	50.00	43,367

CAST-IRON WATER PIPE.—Washington, D. C.—The following bids were received by W. A. McFarland, Supt. Water Dept., on March 14, for furnishing 650 tons of 20-in. c.-i. water pipe, advertised in Engineering News: Dimmick Pipe Co., Birmingham, Ala., $35 per ton; M. J. Drummond & Co., 192 Broadway, New York, $34.80; U. S. Cast-Iron Pipe & Foundry Co., Philadelphia, $36.70.

BRICK PAVING.—Waterloo, Ia.—The council let the contract for 17,400 lin. ft. of curbing and 62,400 sq. yds. of brick paving to the Barber Asphalt Co., New York, on March 6 at the following figures: Grading, 30 cts. per cu. yd.; curbing, 35 cts. per lin. ft.; paving, $1.36 per sq. yd.

BRICK PAVING.—Cleveland, O.—There were two sets of bids received on March 5 by the board of control for paving 38 streets with brick. The Barber Asphalt Co. submitted one set, with prices ranging from 12 to 12¾ cts. per sq yd. for brick, and John C. Cowing, supposed to represent a combination of local contractors, the other set, his figures for brick paving being 14 cts. per sq. yd.

SEWER.—Bakersfield, Cal.—Max Gundlach, Jr., has secured the contract for sewer work in district C, his bid being $34 per lin. ft. for 6-in. sewer and $120 each for 4 × 6-in. Ys.

WATER-WORKS SUPPLIES.—Findlay, O.—John W. S. Riegle, Cy. Engr., writes that the following contracts were awarded from the bids received March 10 for water supplies: J. B. Clow & Sons, Chicago, cast-iron pipe, 48 tons of 24-in. at $30.75 per ton; 126 tons 8-in., $30.75; cast-iron specials, 8 tons, $55; 12 5-in. hydrants, $25 each. Fred. Kleinman, Findlay, receiving basins laid, $2.425. Dull & Hennesy, Arcanum, O., laying 52,800 ft. of pipe, labor, 70 cts.; material, 18 cts. per lin. ft.; 12 brick manholes, each, $25; 3,000 cu. yds. rock excavation, $2.40 per cu. yd. American Sewer Pipe Co., Pittsburg, Pa., $1.13¾ per ft.; 15 specials, $5.12½ each.

ASPHALT PAVING.—Louisville, Ky.—The Barber Asphalt Co. was the only bidder on the work for paving Von Barries Ave. with asphalt, from Beechwood to Edenside, at from $1.69 to $1.70 per sq. yd., varying with the location. The cost of the work will be about $25,000.

WATER VALVES.—Cleveland, O.—The following bids were received by the director of public works on Feb. 28 for furnishing gate valves; advertised in Engineering News:

Bids Received at Cleveland, O., Feb. 28, 1903, for Furnishing Various Gate Valves.

Quantities.	Rensselaer Mfg. Co.	Michigan Brass & Iron Works.	Ludlow Valve Mfg. Co.	Cayuta Wh'l & F'dry Co.	Vincent Valve Co., Sandusky, O.
6-in. gate valves ..... 250 each	$10.40	$10.60	$13.50	$10.50	$11.74
8-in. " " ..... 75 "	17.50	17.65	21.25	17.25	17.74
10-in. " " ..... 20 "	25.50	24.85	36.20	23.50	28.07
12-in. " " ..... 20 "	31.00	31.50	39.00	31.50	33.70
16-in. " " ..... 4 "	68.00	74.00	78.00	58.00	.....
20-in. " " ..... 1 "	135.00	140.00	136.00	98.00	.....
24-in. " " ..... 6 "	290.00	340.00	315.00	.....	.....
30-in. " " ..... 1 "	485.00	565.00	500.00	.....	.....
36-in. " " ..... 1 "	800.00	820.00	798.00	.....	.....
42-in. " " ..... 6 "	1,650.00	1,720.00	1,660.00	.....	.....
48-in. " " ..... 2 "	1,825.00	1,915.00	1,850.00	.....	.....
Total	$20,284.50	$21,071.75	$21,778.75	$5,348.75	$5,500.90

WATER-WORKS SUPPLIES.—Vallejo, Cal.—A. P. Noyes, Cy. Engr., writes us that contract for pipe, specials, valves, etc., for the water-works department, were let as follows; bids received March 2, 1903: Crane Co., San Francisco, Cal., 100.5 tons, 12-in. cast-iron pipe, $41.20 a ton; 81.8 tons 10-in. c.-i. pipe, $41.20; 80.5 tons 6-in. c.-i. pipe, $42.20; 3.6 tons, $67.50; 1 12-in. valve, $59; 1 10-in., $47.25; 10 6-in., $19.25 each; 30 4-in. $11.55 each; R. C. Mattingly, San Francisco, 11,000 lin. ft. trenching and backfilling, 69½ cts. a cu. yd.; 265 tons distributing pipe, etc., $1 per ton.

Bids Received at New York, N. Y., March 7, 1903, for Street Improvement in Borough of The Bronx.

Bidder.	Curb New, 5,000 lin. ft.	Curb Old, 4,600 lin. ft.	Bridgestones New, 4,000 sq. ft.	Bridgestones Old, 5,800 sq. ft.	Granite block, 23,800 sq. yds.	Flagging Old, relaid, 33,000 sq. ft.	Flagging New, 4,000 sq. ft.	Rubble masonry, 100 cu. yds.	Receiving basins, 13 each.	Total.
Geo. H. Blethen	$0.70	$0.10	$0.50	$0.10	$2.25	$0.03	$0.23	$1.50	$100.00	$63,450
G. I. Bailey, 27 W'm St.	.68	.14	.60	.20	2.49	.025	.25	1.25	50.00	69,386
F. V. Smith Con. Co.	.73	.15	.50	.10	2.67	.03	.24	1.54	120.00	74,130
F. Thielman, Jr.	.70	.12	.60	.10	2.52	.03	.24	1.50	100.00	70,408
Century Con. Co.	.80	.23	.62	.10	2.50	.03	.23	1.50	100.00	70,978

MISCELLANEOUS CONTRACTS.

SEA WALL.—Scituate, Mass.—A granite sea wall is to be built at a cost of $2,810.

FERRY SLIP.—San Francisco, Cal.—Contract for constructing ferry slip A has been let to Robt. Wakefield for $56,000.

DITCH.—Delphi, Ind.—Bids are asked until March 28 for constructing ditch in Carrollton. James C. Smock, county auditor.

CANAL WORK.—Columbus, O.—Contract for constructing canal walls in Cincinnati has been let to Kirshmer & Co. for $60,000.

LEVEE.—Evansville, Ind.—The matter of a levee and roadway to water-works plant, to cost $30,000, has been before the council.

DITCH.—Delphi, Ind.—Bids are asked until March 28 for constructing ditch in Tippecanoe township. James C. Smock, county auditor.

LEVEE.—Madison, Wis.—Bill before legislature for constructing levees on Wisconsin and Fox Rivers, near Portage, at cost of $20,000.

QUICK SILVER FURNACE.—San Jose, Cal.—Reports state that the Santa Teresa Q. M. Co. will install a 30-ton quick silver furnace.

QUARTZ.—A correspondent in Ohio wants to know where he can buy finely-ground quartz. Address E. H. F., Engineering News, N. Y.

DOCK DESTROYED.—Portland, Ore.—The Victoria dock, owned by E. W. Spencer and valued at $65,000, was destroyed by fire last week.

BREAKWATER EXTENSION.—Petoskey, Mich.—Bids are asked until April 11 for the extension of the west breakwater at Petoskey, as stated in our advertising columns. Capt. Chas. Keller, U. S. Engr., Grand Rapids, Mich.

RIVER DEEPENING.—Saginaw, Mich.—Contract for deepening the Saginaw River has been let to C. H. Brennan Bros. for about $46,000.

TUNNEL.—Boulder, Colo.—The contract for driving a 3,300-ft. tunnel in the Melvino mine, at Salina, has been let to ex-Sheriff T. J. Thompson.

STEEL VAULT FIXTURES.—Buffalo, Minn.—Bids are asked until April 7 for equipping the clerks' vault with steel fixtures. A. Reinmuth, County Auditor.

MOORING STONES.—Portland, Me.—Bids are asked by the light-house inspector until April 2 for furnishing mooring stones for year ending June 30, 1904.

BRICK.—Chicago, Ill.—Bids are asked until March 21 for furnishing and delivering brick for Section H of intercepting sewer. F. W. Blocki, Comr. Pub. Wks.

GRAIN ELEVATORS.—Chicago, Ill.—It is stated that Geo. T. Sullivan, of the Open Board of Trade, will build and operate grain elevators in Chicago and the West.

MINING MILL.—Searchlight, Nev.—The Cyrus Noble Mining Co. will, it is said, soon install a mill at the Cyrus Noble group of mines. Geo. E. Otis is a director.

STAMP MILL.—Sumpter, Ore.—Reports state that work is to be begun in the spring on a 40-stamp mill to be installed at the Alamo mine. James McGuigan is Supt.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

ROCK CRUSHER.—Pittsfield, Me.—We are informed that this place is ready to purchase rock crusher, elevator and screen. C. E. Vickery is a member of the committee.

DAM.—Holyoke, Mass.—The contract for the dam of the Smith Paper Co., at Lenox Dale, has been let to P. F. Kennedy. The work will cost from $10,000 to $15,000.

PARK IMPROVEMENT.—Chattanooga, Tenn.—The sum of $30,000 has been placed at the disposal of the Chickamauga Park Commission to be used for improvement work.

MINING PLANT.—Central City, Colo.—The Blue Grass Mining Co. will, it is stated, erect a plant for the treatment of ores this spring. Oren Ruffcorn, Murray, Ia., is Gen. Mgr.

PIER.—New York, N. Y.—Bids are asked by the Dock Commissioners, Battery Pl., until March 27, for material and labor for new pier at East 49th St. McDougall Hawkes, Comr.

SUBWAY.—Spokane, Wash.—The Northern Pacific Ry. Co. has completed plans for new Washington St. subway, to be built at cost of $60,000, and work on it is to be begun soon.

DRAINAGE.—Albany, N. Y.—Bill carrying $50,000 before legislature to provide for the drainage of the lowlands in the Conewango Valley in Cattaraugus and Chautauqua counties.

FIRE ENGINES, ETC.—Milwaukee, Wis.—A bond issue of $100,000 is to be asked for purchase of nine fire engines, equipping three new engine houses, and rebuilding engine house No. 3.

BULKHEAD.—Boston, Mass.—Bids are asked by the Harbor and Land Commissioners until March 26 for building about 650 ft. of spruce bulkhead on Commonwealth Flats, South Boston.

COFFER DAM.—Niagara Falls, N. Y.—The contract for the Toronto & Niagara Power Co.'s cofferdam in the Niagara River at Tempest Point has been let to M. A. Pigott, Hamilton, Ont.

WHARF.—San Francisco, Cal.—The Thompson Bridge Co., 9 Mission St., has secured a contract for constructing new wharf and sheds and removal of old buildings on Platte St., to cost $12,115.

COAL MINING.—Chattanooga, Tenn.—Capital Coal Co. will, it is said, soon commence operations on its property in Sequatchie and Grundy counties, where it will open up coal mines and build coke ovens.

DREDGE.—Berkley, O.—Booth & Flynn Co., Ltd., Cape May, N. J., have let a contract to W. E. Thomas & Co., Berkley, for building a hydraulic dredge. The dredge complete will cost about $175,000.

CEMENT AND MORTAR MIXER.—A correspondent wants names and addresses of manufacturers of a cement and mortar mixer, as he is in the market for one. Address, E. H. F. Engineering News, N. Y.

DREDGING.—Camden Harbor, Me.—Bids are asked until April 14 for dredging in Camden Harbor, Me., as stated in our advertising columns. Maj. S. W. Roessler, U. S. Engr., 537 Congress St., Portland, Me.

SMELTER.—Salt Lake City, Utah.—Local reports state that plans for the smelter for Lintic Mining & Development Co.'s Yampa bonanza, at Bingham, are being made by the company's engineer, James W. Neill.

BRICK.—Chattanooga, Tenn.—The Miller-Burns Fire Brick Co. has received a contract for furnishing 500,000 bricks, to be used in constructing $1,600,000 smelter of Appalachian Gold Mining Co., at Fort Mountain.

GYMNASTIC APPARATUS.—New York, N. Y.—Bids are asked by the Park Board, 5th Ave. and 64th St., until March 26, for gymnastic apparatus for gymnasium and playgrounds in William H. Seward Park. Wm. R. Willcox, Comr.

DREDGING.—New York, N. Y.—Bids are asked until April 20 for dredging in Buttermilk Channel and in Gowanus Creek, New York Harbor, as stated in our advertising columns. Maj. W. L. Marshall, U. S. Engr., Army Bldg., New York.

RIPRAP STONE.—Virginia.—Bids are asked until April 14 for furnishing in place riprap stone in dikes in Occoquan Creek, Va., as stated in our advertising columns. Lt.-Col. Chas. J. Allen, U. S. Engr., 2001 I St., N. W., Washington, D. C.

LOCK GATES.—Nashville, Tenn.—Bids are asked until April 22 for constructing four pairs steel lock gates, filling valves, etc., for Locks A and No. 1, Cumberland River, as stated in our advertising columns. Lieut.-Col. M. B. Adams, U. S. Engr.

GUNS, CARRIAGES, ETC.—Washington, D. C.—Bids are asked until April 1 for supplying U. S. Army Ordnance Department with 32, more or less, 3-in. field guns, carriages, limbers and accessories complete. Brig.-Gen. Wm. Crozier, Ch. Ordnance.

DITCH.—Crookston, Minn.—Bids are asked until March 25 for constructing Judicial Ditch No. 1, requiring about 600,000 cu. yds. excavation, and Polk county drainage ditch No. 35, requiring 64,000 cu. yds. excavation. N. A. Hofford, County Auditor.

DITCH.—Webster City, Ia.—Surveys for the Farley ditch are being made by Edw. E. Fox, County Surveyor. The ditch starts at the Iowa River, near Alden, and runs through Hardin, Franklin and Wright counties, ending at Blairsburg, in Hamilton county.

ELECTRICAL AND MECHANICAL APPARATUS.—Pittsburg, Pa.—The Engineering & Equipment Co., 529-530 Bissell Block, Pittsburg, asks to have catalogues devoted to electrical and mechanical lines sent to it for filing purposes. Address Dept. H.

PORTLAND CEMENT.—Marquette, Mich.—Bids are asked until April 11 for furnishing 6,000 barrels of Portland cement for the concrete superstructure to the breakwater at Marquette, as stated in our advertising columns. Capt. D. D. Gaillard, U. S. Engrs., Duluth, Minn.

NEW TOWN.—Carbondale, Ill.—Reports from here state that the Continental Construction Co. has the contract for building the new town of Ziegler for Joseph Leiter, the sinking of three coal shafts, the construction of 1,000 coke ovens and the building of the Leiter railroad.

ICE BREAKER AND PIER WORK.—Tompkinsville, N. Y.—Bids are asked until April 2 for erecting an ice breaker and for repairing the pier at the Coxsackie Light Station, Hudson River, N. Y., as stated in our advertising columns. Maj. Wm. T. Rossell, Engr., Third Lighthouse District, U. S. A.

CANAL TOWING PLAN.—Albany, N. Y.—The International Towing & Power Co. has presented a plan to the joint committee on canals for the towage of canal boats by electric motors. The plans provide for an elevated traction way on the tow path, with one rail above the other, and the running of motor cars.

PIER WORK.—Grand Rapids, Mich.—Burke, Smith & Nelson, Muskegon, Mich., at $6,758, were low bidder for repairing piers at White Lake. They were also low bidder, at $7,769, for repairing Pentwater pier. A. J. Beauvois, Muskegon, Mich., at $8,965, was low bidder for pier repair work at Charlevoix.

DREDGING—New York, N. Y.—Bids are asked until April 15 for dredging at Port Chester, Mamaroneck, Bronx River, East Chester Creek, Port Jefferson, Huntington, Flushing Bay, and repairing stone breakwater at Glencove, N. Y., as stated in our advertising columns. Col. Amos Stickney, U. S. Engr., Army Bldg., New York.

ACETYLENE GAS SUPPLIES.—New York, N. Y.—A correspondent in Chicago wants the names and addresses of firms in New York manufacturing and dealing in acetylene gas supplies and equipment, especially apparatus for contractors. This correspondent is about to start running his steam shovels at night. Address "E. H. F.," Engineering News, New York.

RAILROAD TRACK SCALE.—Pensacola, Fla.—The following bids were received by the Bureau of Yards and Docks, Washington, D. C., on March 14, for a 100-ton railroad track scale at the Navy Yard; (1) scale complete, (2) same as (1), but substituting steel for the timber framework: Standard Scale & Supply Co., Ltd., Pittsburg, Pa., (1) $750, (2) $1,275; Meyer Scale & Hardware Co., Newark, N. J., (1) $1,025, (2) $1,125; Fairbanks Co., New York, (1) $549, (2) $1,045.

GENERAL WORK.—New York, N. Y.—At the opening of bids March 5 for general work, repairs, etc., in the Metropolitan Museum of Art, Louis Wechsler, 26th St. and Broadway, New York, at $24,000, was the low bidder. His bids for the different items were as follows: Steps, $4,000; coal vaults, $4,000; pump room floor, $350; chimney stack, $1,000; dynamo room floor, $2,400; heating tank alterations, $2,500; new sink, $100; door saddles, $30; exhibition cases, $2,500; wainscotting, $2,500; check room fittings, $2,500; settees, $800; sash adjusters, $200; skylight shades, $150; sculptor's office, $1,870.

SLUICE GATES, ETC.—St. Paul, Minn.—The following bids were received by Maj. R. L. Hoxie, U. S. Engr., for 12 steel Tainter sluice gates and accessories, etc.: (1) bid for Tainter sluice gates; (2) bid for steel hinges and accessories for bear trap gate; (3) place of delivery: E. A. Bryan Co., 414 First National Bank Bldg., Chicago, Ill. (1) $20,000, (2) $10,000 (3) Chicago, Ill.; Ellicott Machine Co., Baltimore, Md. (1) $14,626 (add $2,000 to total for sluice gates and hinges, bid of Ellicott Machine Co.), (2) $5,337, (3) Baltimore, Md.; New Jersey Foundry & Machine Co., 9-15 Murray St., New York, (1) $6,600, (2) $13,385, Bloomsburg, Pa.; J. H. Webster, assignee, The Variety Iron Works Co., Cleveland, O., (1) $11,400, (2) $4,600, (3) Cleveland, O.; St. Paul Foundry Co., St. Paul, Minn., (1) $11,100, (2) $6,080, (3) St. Paul, Minn.; Minneapolis Steel & Machinery Co., Minneapolis, Minn., (1) $15,500, (2) $8,000, (3) Minneapolis, Minn.; American Bridge Co., New York, N. Y., E. E. Green, contracting agent, Minneapolis, Minn., (1) $18,500, (2) $9,100, (3) Minneapolis, Minn.

HARBOR IMPROVEMENT, ETC.—Milwaukee, Wis.—We are informed that bids were received March 2 by Maj. J. G. Warren, U. S. Engr., for various improvements to be made to the harbors at Waukegan, Ill.; Sheboygan, Wis.; Manitowoc, Wis., and for dredging and rock removal from the Sturgeon Bay and Lake Michigan Ship Canal. For this last piece of work the Duluth Dredge & Dock Co., Duluth, Minn., was low bidder at the following prices: Dredging, $157,500; 16-hour working day, $148,500; rock removal, $16,500; totals, regular working day, $174,000; 16-hour working day, $165,000. For the Waukegan, Ill., work, consisting of building crib piers, crib breakwater, pile revetment, removal of portion of old pier and dredging the Lydon & Drew Co., Chicago, Ill., at $51,219 was the low bidder for pile revetment, removal of old pier and dredging. For the crib breakwater and piers the Hauler & Lutz Towing & Dock Co., Chicago, Ill., was the low bidder, their bids depending on the material used, being as follows: Plan A—White pine, $253,225; Oregon fir, $248,301; yellow pine, $248,301; Norway, $248,301; government furnishing timber, $144,287. Plan B—White pine, $278,468; Oregon fir, $275,378; yellow pine, $275,378; Norway, $275,378. For building crib piers at Sheboygan, Wis., Nelson J. Gaylord, Ludington, Mich., was the low bidder at the following total bids: Plan A—If white pine is used, $66,799; Oregon fir, $64,897; yellow pine, $64,897; Norway pine, $64,263; government furnishing timber, $35,421. Plan B—White pine, $68,981; Oregon fir, $68,788; yellow pine, $68,207; Norway pine, $67,626. Adolph Green, Green Bay, Wis., was low bidder for building crib breakwater at Manitowoc, Wis., offering the following alternate proposals: Plan A—White pine, $35,077; Oregon fir, $35,230; yellow pine, $34,912; Norway pine, $35,071; government furnishing timber, $21,262. Plan B—White pine, $41,178; Oregon fir, $40,887; yellow pine, $40,693; Norway pine, $40,790.

U. S. POSSESSIONS AND CUBA.

HOTEL.—Havana, Cuba.—It is stated that Sir Wm. Van Horne, Pres., Cuba Ry. Co., has offered to purchase the State Penitentiary property in this city to use it for the site of a $1,000,000 hotel.

DREDGING SCOWS.—A correspondent in Cuba wishes to be put in correspondence with manufacturers of scows for dredging purposes, that have some form of automatic device for unloading. Address, E. H. F., Engineering News, N. Y.

MILITARY POST.—Alaska.—Reports from Tacoma, Wash., state that Bonnell, Cornell & Estes have practically secured the contract for the building of the military post at Haines Mission, Alaska, at their bid of $314,511, which was the lowest.

STREET RAILWAY.—Manila, P. I.—The Manila Rys. & Light Co. has been incorporated at Trenton, N. J., to construct and operate railways in the Philippine Islands and to supply electricity. The incorporators include P. L. Kimberly, Sharon, Pa.; Chas. M. Swift, Detroit, Mich.; George C. Smith, Pittsburg, Pa., and Harry J. Conant, New York. Among the incorporators are the parties who recently received the franchise for operating electric railways and power plants in this city.

RAILWAY.—Alaska.—George Dickinson, formerly Gen. Mgr. of Northern Pacific, states that he has secured capital in Chicago for building the Alaska Central Ry. from Resurrection Bay to Atwood on Tanana River, 40 miles above Rampart and within 20 miles of the new discoveries at Pedro Creek. The main line will be 415 miles long. It is intended to complete 115 miles this year. The Illinois Trust Co. will act as trustee. Reports state that the Western Alaska Construction Co. of Chicago, which has been granted right of way by the government has filed maps, etc., for the construction of the Council City & Solomon River R. R. in the Steward Peninsula.

STREET RAILWAY.—Manila, P. I.—Secretary Collette, of J. G. White & Co., of New York, part of the syndicate which has the 50-year franchise for street railways and electric lighting, heating and power plants in Manila, has stated that according to the contract work must be started within 60 days of the date of the contract and be completed within 20 months after starting work. It is very likely that the work will be finished long before the expiration of that period. The electrification of the old mule line will proceed with the construction and installation of electricity on the lines authorized in the concession, which provides a route over some 35 miles of street railway. The total cost of construction will approximate $3,000,000.

FLOATING DRY-DOCK.—Manila, P. I.—The following bids were received by the Bureau of Yards and Docks, Washington, D. C., on March 14 for constructing a self-docking steel floating dry-dock for the U. S. Navy at Cavite, Manila; (1) dock and appurtenances delivered at Cavite ready for operation, (2) dock, etc., delivered at works of contractor ready for towing and without insurance, (3) alternative proposal: U. S. Shipbuilding Co., Jersey City, N. J., (1) $1,443,000, (2) $1,184,000, 20 months, delivery at Wilmington, Del.; (2) $1,220,000, delivery at San Francisco; (3) $1,100,000, delivery at Cavite, 20 months. Maryland Steel Co., Sparrows Point, Md., delivery near Sandy Point, Md., (2) $1,085,000, $1,164,000, $1,124,000, $1,215,000. Chauncey N. Dutton, New York, (2)$1,105,000, (2) add $110,000, (3) $910,000, (3) $310,000 (3) $310,000 (c), (3) $170,000 (d).

FOREIGN CONTRACTS—EXPORT NEWS.

WATER-WORKS.—Reuteria, Spain.—Bids will be opened in the Casa Consistorial of this town on April 25 for constructing water-works, costing about $25,000.

ELECTRIC RAILWAY.—Spain.—Application has been made by Don Damaso A. Arango y Mendez for the concession for an electric railway from Cartagena to La Union.

CRANES.—London, Eng.—Bids are wanted by the London County Council until March 31 for two 10-ton overhead traveling hand cranes, six 5-ton and three 2-ton. S. L. Gounne, Clk.

BRIDGE.—London, Eng.—Bids are asked until March 30 for erecting two steel swing bridges for the south dock of the Cardiff Ry. Co. Address the Secretary, 22A Queen Anne's Gate, Westminster.

SEWERS.—Weymouth, Eng.—Bids are asked until March 31 for supplying and laying about 4,000 yds. of c. i. and stone pipe sewer, with manholes, flushing tanks, filter beds, etc. H. A. Huxtable, Clk.

MINING, ETC.—Siberia.—Siberian concessions are said to have been made by the Russian Government to the Northwestern Commercial Co., John Rosene, Seattle, Wash., Pres., for concessions for mineral and fishing rights. Last year the company took 60 American miners and prospectors to Siberia, and is now planning to take several hundred more to explore the region.

RAILWAY.—Mexico.—We are informed that a concession lately granted to Mariano Cerenado and Cenobio I. Enciso to construct a railway from Guadalajara to Chapala, a distance of about 40 miles, has been transferred by them to Narcise Zermeno and Ernesto Mora. Señor Zermeno has gone to the United States to consult with capitalists who are considering the construction of the line.

ELECTRIC RAILWAY.—Argentina.—The Buenos Ayres Grand National Tramways Co., Ltd., with headquarters at 6 Eastcheap, London, E. C., which owns some 46 miles of line, besides controlling the horse lines of the Buenos Ayres New Tramways Co., Ltd., proposes substituting electrical power for operating the entire system, in place of the horse-power now used. The work will first be undertaken in 30 miles of the line.

IMPROVEMENTS.—Vera Cruz, Mex.—U. S. Consul Canada at Vera Cruz states that extensive and important improvements have been carried out since last year by the federal and municipal governments, and before long the city will have its extensive system of drainage under way and a water supply from a new reservoir and water main, and also have asphalt pavement on many of its streets. Many of the public and private buildings are being remodeled and rebuilt.

WATER-TUBE BOILERS.—Copenhagen, Denmark.—Bids are reported wanted by the Copenhagen Public Lighting Office, Vestre Boulevard, Copenhagen, until March 31, for supplying five water-tube boilers of about 300 sq. metres heating surface each, with pressure of 13 atmospheres. The lighting department is also receiving bids until April 7 for a gas holder of 3,000,000 cu. ft. capacity, as stated in our issue of Feb. 26, and advertised in Engineering News in that issue and the two following.

MINING DEVELOPMENTS.—Mexico.—City of Mexico. Edward F. White, chief engineer and one of the owners of the big sulphur deposit in state of Zacatecas, was recently in Monterey, and stated that a smelter is now building on the ground, and that the company would probably put in a large plant within a few years.——Monterey.—The Mining Co. of Nuevo Leon, which has been organized to develop the mineral district south of Montemorelos, is, according to C. C. Pierce, Pres., ready to develop its property. Two reducing and concentrating machines will be installed as soon as possible.

RAILWAY.—Mexico.—We are informed that a concession has been granted Leon Pegot to utilize the waters of the Santiago River in the first canton of the State of Jalisco for motive power, to the extent of 10,000 liters per second. The concession covers the river from the point where the concession held by the Hydraulica Mexicana Co. terminates to the point where the Martinez Negrete and Enrique Schondube grant commences. Surveys must commence within six months, and plans presented to the department of fomento within one year. Construction must commence within two years, and the works completed within seven years.

RAILWAY WORK.—Mexico.—The Kansas City, Mexico & Orient R. R. has let contracts for grading to David Shaw for the second 50 kilometers west of Minaca, including the stone work, and to G. Webb of Parral, for the second 50 kilometers east of Chihuahua. Work is to begin at once on both contracts.——J. S. Eldridge of the Las Cabezas mine was recently in Chihuahua, Mex., figuring on a railway from a point on the Mexican Central R. R. between Galeago and Spauz Rome, 60 miles to Neuves Casas Grandes.——F. P. Flood, Engr., Mitchell Mining & Smelting Co., was recently in Mexico City and stated that he had finished a survey of a road from the company's mines in Guerrero to Acapulco, a distance of 65 miles, which could either be adapted for a wagon road or a railway. The grades are comparatively easy after passing 10 miles beyond the mine.

HARBOR IMPROVEMENTS.—Kingston, Jamaica.—Bids are wanted by the Director of Public Works, Kingston, until April 20, for the work connected with the improvement of the harbor of Falmouth in the island of Jamaica, as more fully described in our advertising columns of this and the following issue. The work will consist of the excavation of "Triangle Rock," about 300 cu. yds.; two spurs of the main reef on the west side of the harbor, 950 cu. yds.; "Hopewell Rock," 1,500 cu. yds.; "Middle Shoal," 7,500 cu. yds.; "Inner Shoal," 5,700 cu. yds. and "Harbor Rock," 500 cu. yds. Contractors' plant, tools and materials will be admitted for

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the performance of the work free of import duty, and security amounting to about $5,000 will be required of the contractor. Gillespie Bros. & Co., 4 Stone St., New York, are agents for Jamaica, and will furnish further particulars if desired.

PAN-AMERICAN RAILWAY.—The project to build an all-rail route between Buenos Ayres, Argentine, and New York city is again being discussed. The approval of the plan was given by the governments of the South American countries long ago, and the Pan-American congresses have indorsed it, and the last one appointed a permanent committee with headquarters at Washington, D. C. It is proposed to build connecting links between the present systems of railway or projected lines in the various countries through which the line will run, thereby giving trunk line connection between the two points. The International R. R. Commission of 1899 estimated that it would require some $75,000,000 to materialize the plans. Chas. M. Pepper, who is connected with the committee appointed by the Pan-American Congress, is going to confer further with the South American governments in regard to carrying out the scheme.

MACHINERY, ETC.—Russian Poland.—Hernando de Soto, Vice-Consul at Warsaw, Russia, reports under date of Feb. 11 that on account of various troubles existing in the German Polish provinces, the commercial relations between Russian Poland and Germany has become rather strained, and there is now a good opening for American products in Warsaw and cities in Russian Poland. With the exception of agricultural machinery, few American goods are on sale in Warsaw, except those which are introduced by Hamburg and Berlin commission houses, and it is preferable to avoid the "middleman," and to import direct. The following is a list of American-made goods which are partly introduced or would find a ready sale in Warsaw: Wringing machines; meat-chopping machines; hair-clipping machines; typewriters; gramophones; safety razors; tools of all kinds for carpenter, locksmith, etc.; galvanized-iron spoons (in large demand); machinery of all kinds and their parts; machine tools, especially labor-saving machinery; cotton and cotton waste; hunting rifles; hydraulic lifts; rubber shoes, light-weight; hardware, all kinds; agricultural machinery. (There is a special representative here.) Automobiles for heavy loads. Mr. de Soto also states that a company is about to be organized in this city with a view to introducing automobiles on a large scale, and that it intends to obtain offers from English, French, and Belgian manufacturers. The following concerns desire agencies for American goods, and are reported by Mr. de Soto as reliable: Bronislaw Oderfeld, 17 Ujasdowska Aleja, and Leopold Tennenbaum, 12 Leszno. Direct correspondence with them is recommended.

MISCELLANEOUS WORKS.—Mexico.—A correspondent sends us the following:

City of Mexico.—The plans for the proposed new National Theatre building that is to be erected here have been completed by Adam Boin, Arch., and submitted to the federal government for approval. The construction of the building will soon begin.——Antonio Pacheco, Gen. Mgr. Electric & Irrigation Co., has made application to the city council for a contract to clean the drainage canals of the valley of Mexico. The proposition will probably be favorably considered.——It is announced here that the International Construction & Improvement Co., which was recently organized under the laws of Arizona, with a capital stock of $7,000,000 for the purpose of making investments in Mexico, will undertake a number of important manufacturing enterprises in this country.——The San Ildefonso Woolen Factory Co., represented by Daniel Huarte, has obtained a concession from the federal government for the construction of a railway from this city to Tlainepantla, where the factory is situated, a distance of 12 kilometers. This company already owns and operates the Monte Alto railroad which runs between Tlainepantla and San Pedro, 20 kilometers.——H. F. Jergens, a soap manufacturer of Cincinnati, Ohio, is investigating the matter of establishing a large soap factory in Mexico City. The proposed factory will be a branch of the Cincinnati concern.——The Southern Sugar Co., of Terre Haute, Ind., is preparing to erect a sugar mill with a capacity of 500 tons of cane per day on the Isthmus of Tehuantepec. The cost of the plant will be about $160,000 gold. B. G. Heidnitt, Terre Haute, is Pres.——Coatzacoalcos.—The shops of the National Tehuantepec R. R. are to be removed from this place to Rincon Antonio. Buildings are now being constructed at the latter place for the purpose.——Chihuahua.—A bridge is to be constructed over a canon near Cacueta by the Kansas City, Mexico & Orient R. R. The canon is 250 ft. wide at the point where it is proposed to erect the bridge and is more than two thousand feet deep. It would require the construction of more than 70 miles of additional track to build around this canon.——Ixtlahuaca.—Plans are being prepared at the direction of Governor Villada for the construction of a water-works system for this place.——Monterey.—The erection of a large training school in this city by the Methodist church is practically assured. About one-half of the $100,000 required to erect and equip the necessary buildings has been subscribed in the United States and Mexico.——A company has obtained a concession from the federal government for the establishment of a factory at some point in Mexico for the manufacture of kitchen utensils and other articles from aluminum. The factory will probably be located at Monterey.——F. P. Bever, President of Grandpa's Wonder Soap Co., of Dayton, O., is in Mexico seeking a location for a soap factory. It will probably be established in this city.——It is announced that the Mexican Central Ry. Co. will expend about $500,000 in improvement work on its Gulf division during the current year.——Puebla.—The machinery has been ordered for the large iron and steel foundry to be established at Tepeyahualco, this state, by Emilio Segura and associates.——More than $100,000, half of the required amount, has been subscribed by citizens of this place for the erection of a casino or club building.

CONTRACT PRICES.

TIMBER AND PLANK.—Milwaukee, Wis.—The following bids were received by Maj. J. G. Warren, U. S. Engrs., on March 2 for furnishing Oregon fir timber and plank, as advertised in Engineering News:

Bids Received at Milwaukee, Wis., March 2, 1903, for Furnishing Timber and Plank.

Bidder.	Oregon fir timber.		Surfacing			
			Timber		Plank	
	6,339,792 ft., B.M.	418,227 ft., B. M.	One side, per M. ft.	Two sides, per M. ft.	One side per M. ft.	Two sides, per M. ft.
John K. Joice, Chicago, Ill.	$12.00	$12.00	$1.00	$1.00	$1.00	$1.00
The Eastern & Western Lumber Co., Portland	10.50	10.50	.50	.75	.50	.75
H. B. Waite Lumber Co., Minneapolis, Minn.	8.70	8.20	1.00	1.50	.90	1.40
Lewis & Crane, Seattle, Wash.	11.25	10.00	.....	.....	.....	.....
The Merz-Hill Lumber Co., Minneapolis, Minn.	11.00	10.75	1.50	1.75	1.50	1.50
Frank B. Stone, Chicago, Ill.	10.90	8.90	.75	1.00	.75	1.00
South Arm Lumber Co., Milwaukee, Wis.	10.50	10.50	1.00	2.00	1.00	1.00
Chicago Lumber & Coal Co., St. Louis, Mo.	9.48	9.48	.48	.96	.48	.96

CAST-IRON WATER PIPE.—Yonkers, N. Y.—Bids were received as follows by the board of water commissioners on March 5 for furnishing cast-iron water pipe; Chas. Millar & Son bid 2¾ cts. a lb. for 20 tons of castings; advertised in Engineering News:

Bids Received at Yonkers, N.Y., March 5, 1903, for Furnishing Cast-Iron Water Pipe.

Bidder.	Cast-iron pipe, a ton.					
	24-in., 335 lengths.	8-in 500 lengths.	6-in., 500 lengths.	4-in., 50 lengths.	Castings. 20 tons.	Total.
John Fox & Co.	$33.80	$33.80	$34.90	$34.90	$59.00	$23,227
Warren Foundry & Machine Co.	32.40	32.40	32.40	32.40	61.00	22,254
M. J. Drummond & Co.	33.00	33.00	34.00	35.00	61.00	22,756
U. S. Cast-Iron Pipe & Foundry Co.	33.90	33.90	33.90	33.90	66.90	23,348
Camden Iron Works	33.40	33.40	33.40	33.40	58.00	22,843
Chas. Millar & Son, Utica, N. Y.	29.60	29.60	29.60	29.60	.....	22,753

CAST-IRON WATER PIPE, ETC.—Boston, Mass.—The following bids were received by the Water Commissioners March 7 for furnishing cast-iron water pipe and castings: Foxboro Foundry Co., iron castings, Class 1, 1,200,000 lbs., 3⅜ cts. a lb.; Class 2, 150,000 lbs., 2.9 cts.; Wollaston Foundry, Wollaston, Class 1, $0.0375; Class 2, $0.0275; Composition castings—J. H. McCafferty, Boston, Class 1, 15,000 lbs., 20½ cts. per lb.; Class 2, 40,000 lbs., $0.21; Class 3, 3,000 lbs., $0.15; C. E. Rogers, Boston, Class 1, $0.27½; Class 2, $0.25½; Class 3, $0.24:

Bids Received at Boston, Mass., March 7, 1903, for Cast-Iron Water Pipe, Etc.

Bidder.	Size of water pipe.							
	36-in., 160 tons.	16-in., 460 tons.	12-in., 1,260 tons.	10-in., 350 tons.	8-in., 500 tons.	6-in., 150 tons.	4-in., 20 tons.	Specials, 15 tons.	Total.
U. S. C.-I. Pipe & F'dry Co., Philadelphia	$29.70	$29.70	$29.70	$29.70	$29.70	$29.70	$29.70	$55.00	$86,955
Reading (Pa.) Foundry Co.	30.50	31.00	31.10	31.50	31.50	32.25	32.50	57.00	91,444
Warren Foundry Co., Phillipsburg, N. J.	31.50	31.50	31.50	31.50	31.50	31.50	31.50	55.00	92,175
W. V. Briggs, New York	31.50	31.50	31.50	31.50	31.50	31.50	31.50	55.00	92,175
Camden (N. J.) Iron Works	.....	35.70	35.70	35.70	35.70	35.70	35.70	65.00	98,773

MACADAMIZING.—New York, N. Y.—The following bids were received by the Borough President of Manhattan on March 3, 1903, for resurfacing and repaving with macadam the roadway of 7th Ave., from 120th St. to 145th St.:

Bids Received at New York, N. Y., March 3, 1903, for Macadamizing Part of 7th Ave.

Bidders.	Macadam pavement, 56,200 sq. yds.	Bridgestone		Curb		
		New, 4,740 sq. yds.	Old, 10,240 sq. ft.	New, 4,360 lin. ft.	Old, 7,960 lin. ft.	Total.
F. Thielman, Jr., 147 E. 125th St., New York	$0.35	$0.70	$0.35	$0.90	$0.30	$60,993
J. M. Waddle, New York	.62	.75	.27	1.05	.27	47,837
Century Construction Co., 21 Park Row	.41	.55	.08	.83	.27	32,194
C. W Collins, 166th St. and Webster Ave.	.67	.55	.25	.90	.30	49,088
F. V. Smith Con. Co., 147 E. 125th St.	.58	.68	.08	.98	.38	43,887
J. J. Hart Co., 54 Broad St.	.90	.75	.25	.93	.25	62,693

DREDGING.—Duluth, Minn.—Capt. D. D. Gaillard, U. S. Engrs., received the following bids on March 9, for dredging at Ashland, Wis., and Ontonagan, Mich. Amounts apportioned for the work was $5,000 for Ashland and $4,200 for Ontonagan. James Pryor, Houghton, Mich., Ashland, 24 cts. per cu. yd.; Ontonagan, 23 cts.; Lake Superior Contracting & Dredging Co., Duluth, 23 cts. and 25 cts., respectively.

INDUSTRIAL NOTES.

THE PASSAIC STEEL CO., New York, the successor to the Passaic Rolling Mill Co., has removed its offices to 5 Nassau St., N. Y.

THE PITTSBURG FILTER MFG. CO., of Pittsburg, Pa., has removed its offices from the Empire Bldg. to the Farmers' Bank Bldg., Pittsburg.

THE EGLEE-BUNTING CO., contractors, 120 Milk St., Boston, Mass., is the successor of the C. H. Eglee Co., who carried on a contracting business in New England for the past twenty years.

THE NEW YORK CONTINENTAL JEWELL FILTRATION CO., Mill Bldg., New York, has secured an order from the Southern Cotton Oil Co., Savannah, Ga., for a large gravity type filtration plant. The company has received the following orders for water purifying plants: His Majesty the Khedive of Egypt, to install a system of Jewell gravity filtration for the Royal Palaces at Mantaya, near Alexandria; Royal Hungarian R. R., Klausenberg, Hungary; John J. Campbell, 3d and Cumberland Sts., Philadelphia; Mutual Life Ins. Co., Cape Town, S. Africa; Barrett Mfg. Co., 36th and Grays Ferry Road, Philadelphia; Garrick Hotel & Restaurant Co., Annex, 108 S. 13th St., Philadelphia; also one for the Cornell University, Ithaca, N. Y. Columbus Water-Works Co., Columbus, Ga., has given a contract for a Jewell gravity filter plant, for the city water supply, 2,000,000 gallons daily capacity.

NORMAN B. LIVERMORE & CO., Engineers and Manufacturers' Agents, of San Francisco, Cal., announce the removal of their offices from 320 Sansome St. to the Rialto Building, corner of New Montgomery and Mission Sts.

THE LOCKE STEEL BELT CO., Bridgeport, Conn., has moved its plant and offices to the new factory building at Water St. and South Ave. The building is 200 × 60 ft. Villard & Osswald, of Brooklyn, N. Y., furnished the machinery.

THE ENGINEERING AGENCY OF CHICAGO states that during the past ten years it has secured positions for over 5,000 technical men, and that during the past two years over 3,000 men have registered with it, notwithstanding which it is unable at the present time to satisfactorily fill all the applications which it receives from employers. F. A. Peckham the President, and A. B. Gilbert the Treasurer, were formerly with Engineering News.

THE ALLIS-CHALMERS CO., Milwaukee, report the following partial list of engine sales for February: Bucyrus Co., South Milwaukee, one 16 × 42 1890 frame Reynolds Corliss engine; Southwestern Mo. Electric Ry. Co., Webb City, one 30 and 60 × 48 horizontal cross-compound D. C. Reynolds Corliss engine; Albert Schwill & Co., Chicago, two 26 × 48 1890 frame D. C. Reynolds Corliss engines; Wausau Paper Co., Brokaw, Wis., one 16 × 36 girder frame Reynolds Corliss engine; Vulcan Iron Works, San Francisco, one 14 × 36 girder frame Reynolds Corliss engine; Union Electric Light & Power Co., St. Louis, one 12 × 16 engine; The S. Obermeyer Co., Cincinnati, one 20 × 48 girder frame Reynolds Corliss engine; Geo. M. Moulton & Co., Chicago, one 24 and 48 × 48 steeple-compound Reynolds Corliss engine; The Javril Co., Battle Creek, Mich., one 12 × 30 girder frame Reynolds Corliss engine; Louisville Ry. Co., Louisville, two 40 × 78 × 60 vertical cross-compound D. C. Reynolds Corliss engines; Jas. Davidson, West Bay City, one 16 × 42 girder frame Reynolds Corliss engine; Denison Light & Power Co., Denison, Tex.; Albuquerque Gas, Electric Light & Power Co., Albuquerque, one 16 and 28 × 36 horizontal cross-compound D. C. Reynolds Corliss engine; Hartwell Bros., Chicago, one 16 × 42 1890 frame Reynolds Corliss engine; Chicago File & Rasp Co., one second-hand 14 × 42 right-hand F. & C. Corliss engine; Denver (Colo.) Engineering Works, two single differential electric-driven Riedler pumps.

THE MILWAUKEE BRIDGE CO., Milwaukee, Wis., which was formerly the Milwaukee Structural Steel Co., has purchased land and has begun the construction of its plant on 35th St. C. H. Starke, of the Starke Dredging & Dock Co., Conrad Trissobow, 1428 Cedar St., Milwaukee, and F. W. Moore, Ch. Consult. Engr., Waukesha, Wis., are interested.

THE AMERICAN BLOWER CO., Detroit, Mich., have secured, among others, the following orders: Heating apparatus for the Colo. Fuel & Iron Co., Redstone, Colo.; Compensating Pipe Organ Co., Battle Creek; Jeansville (Pa.) Iron Works; Canadian Pacific roundhouse, Ft. William, Ont.; Land Title Bldg., Philadelphia; University of Pennsylvania laboratory and Troy (N. Y.) School; mechanical draft apparatus for the U. S. Mint, Denver; Charlotte (N. C.) St. Ry., Light & Power Co.; New Prague (Minn.) Flouring Mill Co. and Lafayette (Ind.) Hominy Mills.

NEW COMPANIES.—Dunbar & Sullivan Dredging Co.; $360,000; Fredk E. Dunbar, Stoughton, Mich.; E. D. Hardison, West Troy, N. Y.——Holsman Automobile Co., Chicago, Ill.; $10,000; George P. Cary, H. K. Holsman.——Alma Cement Co., 1 Exchange Pl., Jersey City, N. J.; manufacture cement; $10,000; Robt. S. Green, Geo. Z. Cutley.——Hudson Portland Cement Co.; $6,000,000; manufacture Portland cement, lime, etc.; Wm. A. MacKenzie, Jr., Onondaga County Savings Bank Bldg., Onondaga, N. Y.——American Railway Equipment Co., 15 Exchange Pl., Jersey City, N. J.; manufacture railway appliances; $100,000; K. K. McLaren, Horace S. Gould.——Union Cross-Tie Co., 15 Exchange Pl., Jersey City, N.J., manufacture railroad cross-ties; $100,000; A. Donaldson, Jas. Cochran.——United States Locomotive Co., Chicago, Ill.; $300,000; manufacture locomotive railway devices; A. C. Torbert, F. W. Job.——Positive Railway Sander Co., 419 Market St., Camden, N. J.; $50,000; Chas. V. Rote, Chas. Forney.——Superior Portland Cement Co., 525 Main St., East Orange, N. J.; $600,000; Frank R. Series, C. Smith, G. A. Griffin.——Ohio Paving Co., Youngstown, O.; $25,000; Wm. T. Gibson, Wm. Tod, Jas. D. Gibson.——National Construction Co., Biddeford, Me.; general constructing; $200,000; Melville Woodman, Edwin Stone.——New Jersey Brick & Tile Co., 15 Exchange Pl., Jersey City, N. J.; $100,000; Geo. F. Brensinger, John Bentley, R. P. Bentley.——Empire Patent Puddling Furnace Co., 185 Montgomery St., Jersey City, N. J.; $125,000; Wm. Kent, John W. Avery, S. R. Bullock.——M. T. Lewman Co., 525 Main St., East Orange, N. J.; contracting; $250,000; Robt. N. Clyde, F. L. Palmer, Chas. O. Geyer.——American Car Lubricator Co., 15 Exchange Pl., Jersey City, N. J.; $1,000,000; Stephen G. Williams, Valentine Taylor.——Gold Reduction Co., 15 Exchange Pl., Jersey City, N.J.; $60,000; H. B. Hatch, R. Parker.——Hanover Brick Co., Morristown, N. J.; manufacturing brick; $100,000; R. W. McEwan, Chas. W. Ennis.——United Paving Co., deal in paving blocks; $150,000; Duane H. Nash, Amherst, Mass.; Robert P. Esty, Worcester, Mass.; Darwin F. Allis, Conway, Mass.——The St. Paul Railway Supply Co., St. Paul, Minn.; manufacture the Dunn frog and switch indicators and deal in other railroad supplies; $250,000; Frank C. Towns, St. Paul; W. P. Crockett, Chicago, Ill.——American Window Glass Machine Co., Trenton, N. J.; $20,000,000; manufacture glass and machinery of all kinds; Montford Mills, Grant Notman; A. G. Thatcher, Jersey City, N. J.——Hyle Steel Tool Co., Trenton, N. J.; $1,000,000; Lewis A. Leonard, Wm. H. Clark, Chas. C. Warren, Jersey City, N. J.——See Engineering Co., New York, N. Y.; $50,000; Horace See, Jos. C. Mulford, H. A. Maser.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

TRADE PUBLICATIONS.

BRICK AND TILE MACHINERY.—F. E. Hook, Hudson, Mich. Paper; one sheet; 8½ × 11 ins.; illustrated.

A view is given of the Kells machine, together with a number of testimonials from those who have used it.

CONCRETE PILES.—Raymond Concrete Pile Co., Merchants' Loan & Trust Building, Chicago. Paper; 6 × 9 ins.; pp. 36; illustrated.

The Raymond system of concrete pile construction has been illustrated and described in our columns. In this artistic pamphlet the system is briefly described, and there are illustrations of work where it has been used, as well as of possible applications of the system to various classes of work. There are also testimonials from architects who have employed the system in foundation work.

REFITTED STEAM POWER EQUIPMENT.—The Norton & Cole Machinery Co., Cincinnati, O. Paper; 3¼ × 5¼ ins.; pp. 64.

This is a list of stationary engines, locomotives and marine engines, portable and traction engines, boilers, pumps, feed-water heaters, air compressors, sawmill and electric light plants, machine tools, etc., which have been overhauled and refitted at the company's shops and are offered for sale.

CREOSOTED CONDUITS AND CROSS-ARMS.—The Wyckoff Pipe & Creosoting Co., Portsmouth, Va. Paper; two pamphlets; 5¾ × 8½ ins., pp. 4; and 3½ × 5¼ ins., pp. 4; illustrated.

The larger pamphlet shows the form of construction of creosoted wooden conduits for electric wires and cables and also refers to the use of creosoted cross-arms for telegraph poles. The smaller pamphlet gives a list of companies using the conduits.

TRACTION ENGINES FOR FREIGHT SERVICE.—Best Mfg. Co., San Leandro, Cal. Paper; oblong; 10 × 6¾ ins.; pp. 21; illustrated.

The Best engines differ from the ordinary style of traction engine in having a T-shaped boiler (part vertical and part horizontal) and three wheels, the driving wheels being 8 ft. diameter. The engines are also of higher power than is customary, being rated at 50 HP. They are used for logging work and for freight hauling, special steel wagons being used for the latter class of work. Some of the illustrations show the engines hauling trains of wagons loaded with ore and lumber.

ORE AND ROCK-CRUSHING MACHINERY.—Earl C. Bacon, Havemeyer Bldg., New York city; 7½ × 10 ins.; pp. 62; illustrated.

The "Farrell" jaw crusher, in all sizes, is shown in this catalogue; tables of weights, output, horse-power required for crushers, etc., being given. The "Farrel-Bacon Duplex Crusher" is worthy of note, for in one frame there are two jaw crushers working side by side, designed as auxiliary crushers in connection with rolls. A balanced shaking screen for damp or dry rocks and ores is likewise novel. Rotary screens, belt conveyers, and crushing rolls of many patterns are shown and described. A very useful part of the catalogue is that showing detail cross-sections of ore and rock-crushing mills and bins.

CLING-SURFACE AND BELT MANAGEMENT.—By John E. Powers, M. A. Cling-Surface Mfg. Co., Buffalo, N. Y. 12mo.; pp. 72.

Cling-Surface is a kind of a belt dressing which is applied hot and worked into the belt. Its manufacturers claim that by its use the old rule for belting—the tighter the belt the more power may be transmitted—is reversed, and the new rule they ask the public to believe is, "With Cling-Surface the slacker your belt the greater your power." The book is written by a professional advertisement writer and he has done his work well. He uses short, pithy sentences and paragraphs, large, clear type, many photographs of belts running so slack that the upper side almost touches the lower, and makes such an attractive book as will almost convince an engineer that all he has hitherto learned about belts is wrong. Since Mr. F. W. Taylor, one of the great belt experts, says: "What we do not know about belting far exceeds our knowledge on the subject," and the "we" includes all engineers, it may be that this little book contains an important contribution to knowledge, but we advise that many of its statements be taken cautiously until they are confirmed by expert investigation.

DIRECT HEAT BLAST DRYERS.—American Process Co., 62 William St., New York city; 6 × 9 ins.; pp. 16; illustrated.

This booklet describes the automatic dryers made by the American Process Co. The dryer consists essentially of an inclined rotary drum into which the wet material is charged at the upper end, and is caught up by shelves, elevated inside the drum and dropped through the hot furnace gases. The dry material is delivered at the lower end of the drum. The dryer treats fish scrap, garbage, ores, peat, cement mixtures, coal, sand, etc. A list of users is given.

CHAMPION ROAD MACHINERY.—Good Roads Machinery Co., Kennett Square, Pa.; 7 × 9½ ins.; pp. 12; illustrated.

This catalogue illustrates and describes Champion Rock Crushers of various sizes, and the details of the crushers like elevators, screens, etc. Endless belt conveyors for elevating crushed stone, traction engines, dump cars, power drills, road machines, horse rollers, plows, scrapers and stone distributing carts, sprinklers and sweepers are illustrated and described.

CONTINUOUS LIGHT SEMAPHORE SPECTACLES.—The Union Switch & Signal Co., Swissville, Pa. Bulletin No. 11; 6 × 9 ins.; pp. 5.

This pamphlet describes the new continuous light semaphore spectacle offered by this company, the purpose of which is described as follows:

Firstly: To display the normal night indication whether "Danger" or "Caution," until the semaphore arm has traveled more than two-thirds of its arc towards the "clear" position.

Secondly: To prevent the display of a "clear" night indication under similar conditions, and

Thirdly: To prevent the complete eclipse of the signal light at any point in the transit of the signal from one indication to another.

One of the most important rules for the operation of signals states that "a signal partially or improperly displayed must be regarded as a 'danger' or 'stop' signal and obeyed as such," and is intended in one case to prevent an engineman from accepting as a "clear" signal a semaphore arm which owing to its connections being out of adjustment or other causes has "drooped," or, in other words, is inclined slightly towards the "clear" position when it should properly have been displayed at right angles to the post.

While in day time an engineman can readily determine by the angle which a semaphore arm bears to the post whether it is intended to indicate "clear" or is drooping from the danger position, yet at night, when he has to depend upon the light alone, a serious case of "drooping" in spectacles of earlier design is apt to display a clear indication wrongfully, or to obscure the light entirely.

English railways use an elongated glass in the spectacle to provide a continuous red light until the semaphore arm reaches the safety position. The spectacle here described uses a succession of circular lenses instead. It is noted that the use of continuous light spectacles is now standard on the Pennsylvania and New York Central railways.

SEWERS.

Office of the President
of the Borough of Brooklyn, Room 15,
Municipal Department Building
Borough of Brooklyn, City of New York.
The City of New York, Mar. 12, 1903.

Sealed bids or estimates will be received by the President of the Borough of Brooklyn, at the above office, until 11 o'clock a.m., on 25th day of March, 1903, for furnishing all labor and materials required for constructing Sewers in Foster Ave., from East 9th St. to Flatbush Ave.; Flatbush Ave. from Foster Ave. to Bedford Ave.; East 15th St., from Caton Ave. to Foster Ave.; Caton Ave., from East 15th St. to Parade Place; Parade Place, from Caton Ave. to Ocean Parkway; Ocean Parkway, from Parade Place to St. Paul's Place, in the Borough of Brooklyn.

The Engineer's estimate of the quantities is as follows:

550 lin. ft. 132-in. Brick Sewer;
3,800 " " 120-in. " "
600 " " 120-in. Concrete and Steel Sewer;
10 " " 66-in. Brick Sewer;
1,100 " " 60-in. " " Section "A."
50 " " 60-in. " " Section "B."
2,670 " " 54-in. " "
10 " " 48-in. " "
40 " " 42-in. " "
2,650 " " 36-in. " " (egg shape).
10 " " 36-in. " " (circular).
1,620 " " 30-in. " "
100 " " 18-in. Vitrified Stoneware Pipe Sewer, laid in concrete.
40 " " 15-in. Vitrified Stoneware Pipe Sewer, laid in concrete.
90 " " 12-in. Vitrified Stoneware Pipe Sewer, laid in concrete.
1 Manhole, Class "A."
73 Manholes, Class "B."
3 " " "C."
9 Receiving Basins.
645,000 ft., B. M., Foundation Planking.
1,340,000 ft., B. M., Sheeting and Bracing
5 cu. yds. Concrete, as per Section 61 of specifications.
5 cu. yds. Brick Masonry, as per Section 61 of specifications.

The time allowed for the completion of the work and full performance of the contract is 175 working days.

The amount of security required is $140,000

Bidders will write out the amount of their bids or estimates in addition to inserting the same in figures.

The President reserves the right to reject all bids or estimates if he deem it to be for the interest of the City so to do.

The person or persons making a bid or estimate shall furnish the same in a sealed envelope endorsed with the title given above, of the supplies for which the bid or estimate is made, with his or their name or names and the date of presentation to the President, at the said office, on or before the date and hour above named, at which time and place the estimates received will be publicly opened by the President, and read, and the award of the contract made according to law as soon thereafter as practicable.

Each bid or estimate shall contain the name and place of residence of the person making the same, the names of all persons interested with him therein, and, if no other person be so interested, it shall distinctly state that fact; also, that it is made without any connection with any other person making an estimate for the same purpose, and is in all respects fair and without collusion or fraud, and that no member of the Board of Aldermen, head of a department, chief of a bureau, deputy thereof, or clerk therein, or other officer of the corporation, is, shall be or become interested, directly or indirectly, as contracting party, partner, stockholder, surety or otherwise in or in the performance of the contract, or in the supplies, work or business to which it relates, or in any portion of the profits thereof. The bid or estimate must be verified by the oath in writing of the party or parties making the estimate that the several matters stated herein are in all respects true.

Each bid or estimate shall be accompanied by the consent, in writing, of two householders or freeholders in The City of New York, or of a guaranty or surety company duly authorized by law to act as surety, and shall contain the matters set forth in the blank forms mentioned below.

No bid or estimate will be considered unless accompanied by a certified check or money to the amount of five per centum of the amount of the bond required, as provided in Section 420 of The Greater New York Charter.

For particulars as to the quantity and quality of the supplies, or the nature and extent of the work, reference must be made to the specifications on file in the office of the President.

Bidders are requested to make their bids or estimates upon the blank form prepared by the President, a copy of which, with the proper envelope in which to enclose the bid, together with a copy of the contract, including the specifications, in the form approved by the Corporation Counsel, can be obtained upon application therefor, at the office of the said President. The plans and drawings may be seen and other information obtained at the office of the Assistant Commissioner of Public Works, Room 15, Municipal Building, Borough of Brooklyn.

J. EDWARD SWANSTROM,
President.
12-1t

U. S. ENGINEER OFFICE, 537 Congress St., Portland, Me., March 14, 1903.—Sealed proposals for Dredging in Camden Harbor, Me., will be received here until 12 m., April 14, 1903, and then publicly opened. Information furnished on application. S. W. ROESSLER, Maj., Engrs. 12-4t

U. S. ENGINEER OFFICE, Grand Rapids, Mich., March 12, 1903.—Sealed proposals for Extension of West Breakwater at Petoskey, Mich., will be received here until 3 p. m., April 11, 1903, and then publicly opened. Information furnished on application. CHARLES KELLER, Capt., Engrs. 12-3t

WATER TOWER.

Joliet, Ill., March 16, 1903.

Sealed bids, addressed to Sam. C. Rickson, City Clerk, Joliet, Ill., for a Steel Water Tower of 200,000 gallons capacity, will be received at the office of the City Clerk until 3 o'clock p. m. Friday, April 3d, 1903. Plans, specifications, form of contract, bond and proposal blanks may be seen at the office of the City Engineer or at the office of D. W. Mead, Consulting Engineer, No. 605 First National Bank Building, Chicago, Ill. Said proposals will be presented to the City Council of the City of Joliet at a special meeting to be held at the hour named.

A certified check on a reputable National Bank, payable to Sam. C. Rickson, City Clerk, and for an amount not less than five (5%) per cent. of the bid, must accompany each proposal and a bond for the full estimated cost of the work, will be required with the contract. The right is reserved to reject any or all proposals, or accept any proposal.

H. A. STEVENS,
City Engineer.
12-2t

PUMPING ENGINE.

City Hall,
Toronto, Canada, March 10, 1903.

Sealed proposals will be received by the Board of Control of the City of Toronto, until noon on the 12th day of May, 1903, for the erection of one 15,000,000 imperial gallon, triple-expansion, flywheel, Pumping Engine.

Specifications may be seen and forms of tender obtained at the office of the City Engineer, Toronto, Ontario.

The usual conditions relating to tendering as prescribed by City By-laws must be strictly complied with, or tender will not be entertained.

The lowest or any tender not necessarily accepted. THOMAS URQUHART, Mayor,
12-2t Chairman Board of Control.

U. S. ENGINEER OFFICE, 2001 I St, N.W., Washington, D. C., March 13, 1903.—Sealed proposals for furnishing and placing Riprap Stone in dikes in Occoquan Creek, Va., will be received here until 12 o'clock noon, April 14, 1903, and then publicly opened. Information furnished on application. CHAS. J. ALLEN, Lieut.-Col., Engrs. 12-4t

U. S. ENGINEER OFFICE, Army Building, New York, March 19, 1903.—Sealed proposals for Dredging in Buttermilk Channel and in Gowanus Creek, New York Harbor, will be received here until 12 m., April 20, 1903, and then publicly opened. Information on application. W. L. MARSHALL, Major, Engrs. 12-4t

U. S. ENGINEER OFFICE, St. Augustine, Fla., Feb. 16, 1903.—Proposals for Building and Equipping a Steel Hull, Stern Wheel Combined Dredge and Snagboat, will be received here until 11 a. m., April 17, 1903, and then opened. Information furnished on application. FRANCIS R. SHUNK, Capt. Engrs. 8-1t 10-1t 12-1t 14-1t

PAPER MILL.

Quebec, Can.

Proposals will be received at the office of Geo. F. Hardy, Architect and Engineer, 320 Broadway, New York City, for furnishing material and labor required for the Construction of a plant for the Manufacture of Paper Pulp, at Seven Islands, Quebec, for the North Shore Power Railway & Navigation Co.

The dam and principal structures are to be of concrete, which, together with the side excavation, will amount to approximately 50,000 cu. yds.

Full information may be obtained upon application at the above office or at the company's office, No. 7 West 22d St., New York. 12-3t

SEALED PROPOSALS will be received at the office of the Light-House Engineer, Tompkinsville, N. Y., until 1 p. m., Thursday, April, 2, 1903, and then opened, for the erection of an Ice Breaker, and for repairing the pier, at the Coxsackie Light Station, Hudson River, N. Y., in accordance with specifications, copies of which, with blank proposals and other information, may be had upon application. The right is reserved to reject any or all bids, and to waive any defects. Maj. WILLIAM T. ROSSELL, U.S.A., Engineer 2d Light-House District. 12-2t

U. S. ENGINEER OFFICE, Nashville, Tenn., March 18, 1903.—Sealed proposals for construction, delivery, etc., of 4 pairs Steel Lock Gates, Filling Valves, etc., for Locks A and No. 1, Cumberland River, will be received here until 11 a. m., standard time, April 22, 1903, and then publicly opened. Information furnished on application. M. B. ADAMS, Lieut.-Col., Engrs. 12-4t

U. S. ENGINEER OFFICE, Montgomery, Ala., March 5, 1903.—Sealed proposals for Dredging at West Pass entrance to Apalachicola Bay, Fla., and East Pass entrance to Carrabelle Harbor, Fla., will be received here until April 4, 1903, and then publicly opened. All information furnished on application. R. R. RAYMOND, 1st Lieut., Engrs. 10-4t

U. S. ENGINEER OFFICE, 2001 I St. N.W., Washington, D.C., Feb. 27, 1903.—Sealed proposals for Reconstruction of Pier No. 7 of Aqueduct Bridge across Potomac River, at Georgetown, D.C., will be received here until 12 m., March 30, 1903, and then publicly opened. Information furnished on application. CHAS. J. ALLEN, Lieut.-Col., Engrs. 10-4t

U. S. ENGINEER OFFICE, Wheeling, W. Va., Feb. 21, 1903.—Sealed proposals for furnishing and delivering about 32,000 barrels of American Portland Cement for Ohio River Dams will be received here until 11 a. m. (Eastern time), March 23, 1903, and then publicly opened. Information furnished on application. W. E. CRAIGHILL, Capt., Engrs. 9-4t

U. S. ENGINEER OFFICE, Army Building, New York, N.Y., March 16, 1903.—Sealed proposals for Dredging at Port Chester, Mamaroneck, Bronx River, Eastchester Creek, Port Jefferson, Huntington, Flushing Bay, and repairing Stone Breakwater at Glencove, N. Y., will be received here until 12 m., April 15, 1903, and then publicly opened. Information furnished on application. AMOS STICKNEY, Col., Engrs. 12-4t

For Proposals see pages XXXI., XXXII. of Advertisements and 156, 157 of Supplement.

HARBOR IMPROVEMENTS.

The Government of Jamaica is prepared to receive tenders for the Improvement of the Harbor of Falmouth, in the Island of Jamaica, in the manner hereinafter described.

The work to be executed under the proposed contract consists of the excavation and removal of

(1) The submerged rock in the entrance to the said harbor, known as the "Triangular Rock," to a depth of five (5) fathoms below low water of Spring Tides.

(2) Two spurs of the main reef on the west side of the said entrance, back to a line fifty (50) feet distant from and parallel to a line running S. 35° W. from the center of the said Triangle Rock, and to a depth of five (5) fathoms below low water of Spring Tides.

(3) The submerged rock on the east side of the ship channel into the harbor known as the "Hopewell Rock," to a depth of five (5) fathoms below low water of Spring Tides.

(4) The submerged rocks in the side harbor, known as the "Inner Shoal" and the "Middle Shoal," respectively, to a depth of five (5) fathoms below low water of Spring Tides.

(5) The submerged rock in the harbor known as the "Harbor Rock," to a depth of four (4) fathoms below low water of Spring Tides.

The following will be the conditions of the proposed contract:

1. The work shall be so executed and completed that after its completion there shall be at all points inside the five (5) fathom line enclosing the harbor its ship channel and entrance, a depth of not less than (5) five fathoms below low water of the Spring Tides.

2. The contractor shall not deposit or allow to be deposited any solid matter in any part of the harbor where the depth of water is now less than five (5) fathoms at low water of Spring Tides, and shall remove at his own expense such matter, if any, as shall be so deposited through any act of his or of any of his servants or agents.

3. Payment will be made to the contractor at such times and in such manner as shall be agreed upon before signing the contract.

4. Plant, tools and materials to be used exclusively for the purposes of this contract will, if consigned to the Director of Public Works and kept under the supervision and in accordance with the regulations of the Revenue Department, be admitted free of import duty.

5. The whole of the work included in the contract shall be completed within six months after the date of the contract, and as time is of the essence of the contract, there shall be a deduction made from the contract sum of £5 for every day in excess of the contract time as liquidated damages and not in the nature of a penalty.

6. The contractor and two approved sureties will be required to enter into a joint and several bond to His Majesty the King for a sum of £1,000 for the due performance of the contract.

All the information on the subject of the harbor and the work to be done possessed by the Government of Jamaica may be obtained at the Office of the Director of Public Works in Kingston, Jamaica, but the Government will not guarantee the accuracy of any such information, nor be held responsible should the contractor suffer loss or injury through incorrect or insufficient information.

The rock to be excavated is believed to be chiefly, if not entirely, of coral formation, and the cubic contents of the excavation to be done has been estimated as follows, that is to say:

Triangle rock	300	cu. yds.
Spur No. 1.....	550	" "
Spur No. 2.....	400	" "
Hopewell Rock	1,500	" "
Middle Shoal	7,500	" "
Inner Shoal	5,700	" "
Harbor Rock	500	" "
Total.....	16,450	" "

Tenders must be delivered at the office of the Director of Public Works, Kingston, Jamaica, West Indies, in sealed envelopes, addressed to him and marked outside "Tender for Falmouth Harbor Improvement," on or before the 20th day of April, 1903. 12-2t

CAST-IRON WATER PIPE, ETC.

Falmouth, Mass., March 12, 1903.

The Town of Falmouth, Mass., will receive proposals for furnishing Cast-Iron Water Pipes, Special Castings, Hydrants, Gates and Gate Boxes, for extensions of the water mains of about 5½ miles, until 7 p. m., Thursday, March 26, 1903. Specifications and blank forms of proposal can be obtained by intending bidders upon application to the Engineer, at 101 Tremont St., Boston, Mass.

JOHN H. CROCKER,
JAMES T. WALKER, M.D.,
GEORGE E. DEAN,
Water Commissioners.

LOUIS E. HAWES, Engineer. 12-1t

U. S. ENGINEER OFFICE, Mobile, Ala., March 10, 1903.—Sealed proposals for Dredging in Harbor at Biloxi, Miss., will be received at this office until 12 noon, April 9, 1903, and then publicly opened. Information furnished on application. SPENCER COSBY, Captain, Corps of Engrs. 11-4t

STEEL BRIDGE.

City Engineer's Office,
Erie, Pa., March 16, 1903.

Sealed proposals will be received by the Chairman of the joint session of Councils, in the Common Council Chamber, on Thursday, April 2, 1903, at 8 o'clock p. m., for furnishing material and erecting a Steel Bridge of about 500,000 lbs., in the Buffalo Road, over railroad tracks, in the City of Erie.

Bidding blanks with plans and specifications will be furnished upon application.

Each proposal must be accompanied by a certified check, made payable to the Treasurer of the City of Erie, Pa., or cash, in the sum of Five Hundred ($500) Dollars, conditioned upon a contract being made if awarded by the Councils.

Councils reserve the right to reject any or all bids, also to waive defects in form.

BENJAMIN E. BRIGGS,
City Engineer

12-1t

WATER-WORKS.

Biloxi, Miss.

The Mayor and Board of Aldermen, of Biloxi, Miss., will receive sealed bids up to 7 o'clock p. m., April 7, 1903, for the performance of the following work:

Boring one 8-in. Artesian Well, approximately 1,000 ft. deep.

Furnishing and erecting a Steel Tower and Tank 140 ft. high; tank to contain 240,000 gallons.

Plans and specifications may be obtained upon application to

KIRKPATRICK & JOHNSON,
12-2t Engineers, Jackson, Miss.

RAILWAY WORK.

Beckley, W. Va.

Sealed proposals, addressed to the Engineer in Charge of the Deepwater Railway Company, and endorsed "Proposals for Graduation, Trestle Work and Masonry," will be received at the office of the Deepwater Railway Co., Beckley, Raleigh county, West Virginia, until 2 o'clock p. m., Tuesday, April 14, 1903, for the Graduation (including tunnels), Trestle Work and Masonry on 35 miles of the Deepwater Railway in Wyoming and Mercer counties, West Virginia.

Bidders are required to state in their proposals the names and residences of all the parties interested therein, whether as individuals and or business firms and companies.

The work will be let in sections of approximately five miles each.

Profiles, maps, etc., can be seen, and copies of contract, specifications and blank forms of proposals can be obtained at said office. Contractors will make a separate proposal for each Five-Mile Section; and the proposal and contract for each one of said Five-Mile Sections will be independent of the proposal and contract for any other Five-Mile Section—except, however, that in case a proposal is made for two or more Five-Mile Sections on one form, it will be understood to mean that the bid will be null and void, unless all the sections designated in said form or proposal are awarded to the bidder at the price given in proposal.

Bids must be made upon the blank forms furnished by the Deepwater Railway Co., and for each kind of work or material designated by cross mark (x) on the said form.

The person or persons to whom the contract may be awarded, will be required to appear at the Deepwater Railway Co.'s office with acceptable bondsmen or guarantee company as sureties, and execute the contract, within twelve (12) days from the day of notification that the work has been awarded to him or them.

Bond, acceptable to the Deepwater Railway Co., in the m of 15% of the amount (as determined by the Engineer's approximate quantities and the prices bid) will be required in the event of making an award upon any of the bids submitted.

The Deepwater Railway Co. reserves the right to reject any or all proposals made.

(Signed)
THE DEEPWATER RAILWAY CO.,
By C. P. HOWARD, Engr.-in-Charge.

References: W. N. Page, President, Gauley Mountain Coal Co., Ansted, W. Va. 12-2t

LAYING WATER PIPE.

Lexington, Mass., March 14, 1903.

The Town of Lexington, Mass., will receive proposals for laying about 9,000 ft. of Cast-Iron Water Pipe, mainly 12-in., setting hydrants, gates, etc., until 6 p. m., Wednesday, March 25, 1903.

Specifications and blank forms of proposals can be obtained by intending bidders upon application to E. S. Locke, Chairman Water Commissioners, Lexington, Mass.

E. S. LOCKE,
C. W. SWAN,
T. L. BRUCE,
Water Commissioners.

LOUIS E. HAWES, Engineer. 12-1t

PAVEMENTS.

NOTICE TO CONTRACTORS.

DECLARATIONS OF INTENTION.

City of Dunkirk, N. Y.

Notice is hereby given that the following resolutions were duly passed at a regular meeting of the Common Council of the City of Dunkirk, held Tuesday evening, February 17, 1903:

"Resolved, That the Common Council of the City of Dunkirk does hereby declare its intention to forthwith improve Eagle St., first section, commencing at the south line of Front St., southerly to the south line of Third St., by grading and paving or macadamizing the same; and be it further

"Resolved, That the City Clerk publish the foregoing declaration of intention or the substance thereof, together with the accompanying notices required by the City Charter of the City of Dunkirk, in the 'Dunkirk Daily Herald,' the official paper of the city, and in some general contractors' paper, for two successive weeks, as required by the provisions of the City Charter."

The approximate amount of work to be done is as follows:

EAGLE STREET.—FIRST SECTION.

800 cu. yds. of excavation.
2,600 sq. yds. of pavement.
1,560 lin. ft. of curbing.
1,560 lin. ft. of drain tile.
2 O'Brien receivers; price per receiver for setting same to line and grade only.

"Resolved, That the Common Council of the City of Dunkirk does hereby declare its intention to forthwith improve Eagle St., second section, commencing at the south line of Third St., southerly to the north line of Sixth St., by grading and paving or macadamizing the same; and be it further

"Resolved, That the City Clerk publish the foregoing declaration of intention or the substance thereof, together with the accompanying notices required by the City Charter of the City of Dunkirk in the 'Dunkirk Daily Herald,' the official paper of the city, and in some general contractors' paper, for two successive weeks, as required by the provisions of the City Charter."

The approximate amount of work to be done is as follows:

EAGLE STREET.—SECOND SECTION.

2,000 cu. yds. of excavation.
6,200 sq. yds. of pavement.
3,650 lin. ft. of curbing.
36 lin. ft. of circular curb corners.
3,650 lin. ft. of drain tile.
6 O'Brien receivers; price per receiver for setting same to line and grade only.

"Resolved, That the Common Council of the City of Dunkirk does hereby declare its intention to forthwith improve Eagle St., third section, commencing at the north line of Sixth St., southerly to the north line of Prospect Ave., by grading and paving or macadamizing the same; and be it further

"Resolved, That the City Clerk publish the foregoing declaration of intention or the substance thereof, together with the accompanying notices required by the City Charter of the City of Dunkirk in the 'Dunkirk Daily Herald,' the official paper of the city, and in some general contractors' paper for two successive weeks, as required by the provisions of the City Charter."

The approximate amount of work to be done is as follows:

EAGLE STREET.—THIRD SECTION.

3,000 cu. yds. of excavation.
6,023 sq. yds. of pavement.
3,600 lin. ft. of curbing.
54 lin. ft. of circular curb corners.
3,600 lin. ft. of drain tile.
8 O'Brien receivers; price per receiver for setting same to line and grade only.

"Resolved, That the Common Council of the City of Dunkirk does hereby declare its intention to forthwith improve Deer St., first section commencing at the south line of Front St., southerly to the north line of Seventh St., by grading and paving or macadamizing the same; and be it further

"Resolved, That the City Clerk publish the foregoing declaration of intention or the substance thereof, together with the accompanying notices required by the City Charter of the City of Dunkirk, in the 'Dunkirk Daily Herald,' the official paper of the city, and in some general contractors' paper for two successive weeks, as required by the provisions of the City Charter."

The approximate amount of work to be done is as follows:

DEER STREET.—FIRST SECTION.

3,000 cu. yds. of excavation.
11,875 sq. yds. of pavement.
6,680 lin. ft. of curbing.
100 lin. ft. of circular corners.
6,680 lin. ft. of drain tile.
14 O'Brien receivers; price per receiver for setting same to line and grade only.

And notice is hereby given that the Common Council of the City of Dunkirk will receive bids for the work and furnishing materials for improving said Eagle St., three sections, and Deer St., one section, upon specifications to be delivered to any person desiring to make a bid or bids on the job of doing the work and furnishing materials for improving said streets, which said bids will be opened by the Common Council of the City of Dunkirk, on the 1st day of April, 1903, at 7.30 o'clock p. m. on said day.

All bids must be made upon bidding sheets furnished by the city, and must be accompanied with a certified check payable to the order of the City Treasurer of the City of Dunkirk for 5 per cent. of the cost of such improvement at the price fixed by said bidder.

The said Common Council hereby reserves the right to reject any or all bids that may be made.

All communications respecting the foregoing notice and resolutions should be addressed to James P. Morrissey, City Engineer, Dunkirk, N. Y.

J. P. GROESCH,
City Clerk of the City of Dunkirk.

Dated Dunkirk, N. Y., March 12, 1903. 11-2t

PAVING, ETC.

Meadville, Pa., March 12, 1903.

The Select and Common Councils of the City of Meadville, Pa., will receive sealed proposals up till Wednesday, March 25, 1903, at 8 o'clock p. m., for Grading, Paving and Curbing Chestnut St., from Old Channel to Market St., with either vitrified brick, asphalt block or sheet asphalt, said work to be done in accordance with the plans and specifications now on file at the office of the City Engineer.

The following are the approximate quantities, to wit:

2,010 sq. yds. of paving;
1,120 lin. ft. of 6 x 22-in. curbing;
190 lin. ft. of edge stones;
10 brick inlets, Duplex top No. 2;
4 M. H. catchbasins No. 1;
450 lin. ft. of 20-in. storm sewer;
235 " " of 15-in. " "
50 " " of 12-in. " "
175 " " of 10-in. " "
500 lbs. of cast-iron in plates, etc.

Contractors are to furnish all materials to be used in the construction of said work. A bond with sufficient sureties, or a certified check, made payable to the City Treasurer, in the sum of $50, must accompany each bid, or the same will not be considered.

All proposals must be made on blanks attached to specifications, etc., which will be furnished upon application to the City Clerk, and should be marked, "Bids for Paving Chestnut St." and sent to the undersigned.

The City reserves the right to reject any and all bids. 12-1t

A. C. PARDEE, City Clerk.

PAVING, ETC.

Meadville, Pa., March 12, 1903.

The Select and Common Councils of the City of Meadville, Pa., will receive sealed proposals up till Wednesday, March 25, 1903, at 8 o'clock p. m., for Grading, Paving and Curbing Water St., from Center St. to Pine St., with either vitrified brick, asphalt block or sheet asphalt, said work to be done in accordance with the plans and specifications now on file at the office of the City Engineer.

The following are the approximate quantities, to wit:

5,815 sq. yds. of paving;
1,690 lin. ft. of 6 x 22-in. curbing;
235 lin. ft. of edge stones;
9 brick inlets, Duplex top No. 2;
1 M. H. catchbasin No. 2;
1 catchbasin No. 1 Duplex top;
2 M. H. catchbasins No. 1;
620 lin. ft. of 12-in. storm sewer;
300 " " of 10-in. " "
50 " " of 8-in. " "
100 " " of 6-in. sanitary sewer (in branches);
500 lbs. of cast-iron in plates, etc.

Contractors are to furnish all materials to be used in the construction of said work. A bond with sufficient sureties, or a certified check, made payable to the City Treasurer, in the sum of $50, must accompany each bid, or the same will not be considered.

All proposals must be made on blanks attached to specifications, etc., which will be furnished upon application to the City Clerk, and should be marked, "Bids for Paving Water St.," and sent to the undersigned.

The City reserves the right to reject any and all bids. 12-1t

A. C. PARDEE, City Clerk.

U. S. ENGINEER OFFICE, Duluth, Minn., March 12, 1903.—Sealed proposals for furnishing 6,000 bbls. Portland Cement for Concrete Superstructure to Breakwater at Marquette, Mich., will be received here until noon, April 11, 1903, and then publicly opened. Information on application. D. D. GAILLARD, Capt., Engrs. 12-4t

PROPOSALS FOR NAPHTHA STREET LIGHTING in the District of Columbia.—Office of the Commissioners, D. C., Washington, D. C., March 17, 1903.—Sealed proposals will be received at this office until 12 o'clock m., March 28, 1903, for Lighting the Public Streets, Avenues, Alleys and Roads in the District of Columbia during the year ending June 30, 1904, with Naphtha Lamps. Specifications and blank forms of proposals may be obtained at this office. HENRY B. F. MACFARLAND, HENRY L. WEST, JOHN BIDDLE, Commissioners, D. C. 12-1t

For Proposals see pages XXXI., XXXII. of Advertisements and pages 156, 157 of Supplement.

ADVERTISERS' CLASSIFIED DIRECTORY.

CONTINUED ON PAGE 159.

Air Brakes.
Westinghouse Air Brake Co, Pittsburg, Pa

Air Compressors.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Air Compressor Wks, 26 Cortlandt st, N Y
American Well Works, Aurora, Ill
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 212-17 Herman bldg, Milwaukee
Clayton Air Compressor Works, 114 Liberty st, N Y
d'Auria Pumping Engine Co, Drexel bldg, Phila
Fairbanks, Morse & Co, Chicago
General Pneumatic Tool Co, Montour Falls, N Y
Gray-Blaisdell Co, Bradford, Pa
Guild & Garrison, So 10th st, Brooklyn, N Y
Ingersoll Sergeant Drill Co, 26 Cortlandt st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati O
McGowan, John H, Co, Cincinnati, O
McKiernan Drill Co, 170 Liberty st, N Y
Norwalk Iron Works, So. Norwalk, Conn
Rand Drill Co, 128 Broadway, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre, Pa

Air Drill.
Columbus Pneumatic Tool Co, Columbus, Ohio

Aluminum
Pittsburg Reduction Co, Pittsburg, Pa

Annealing Boxes.
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa

Artesian Wells.
Bacon Air Lift Co, 100 Broadway, New York
Cole Bros, 102 Fulton st, New York
Conlan, P H & J, Newark, N J
Cook Well Co, St. Louis, Mo.
Gregory, Elisha, 123 Liberty st, New York
Phillips & Worthington, 11 Broadway, New York
Stothoff Bros, Flemington, N J
Williams Bros, Ithaca, N Y

Artesian Well Tools and Supplies.
Star Drilling Mach Co, 101 Fulton st, New York

Asphalt.
Commercial Asphalt Co, 11 Broadway, New York
Sicilian Asphalt Paving Co, Times bldg, New York
Warren Bros Co, 93 Federal st, Boston

Asphalt Machinery.
Cummer, F D. & Sons, Cleveland, O.
Erie Machine Shops, Erie, Pa
Iroquois Iron Works, Buffalo, N Y

Batteries (Storage).
Coho & Co, H B, 114 Liberty st, New York

Bearings (Ball and Roller.)
Ball Bearing Co, 2322 Market st, Philadelphia
Standard Roller Bearing Co, Philadelphia

Balances. (Assay and Analytical.)
Ainsworth, Wm. & Sons, Denver, Colo

Belt Dressing.
Dixon, Jos., Crucible Co. Jersey City, N J
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Canvas.)
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Chain)
Aultman Co, Canton, O
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Philadelphia

Belting (Leather)
Graton & Knight Mfg. Co, Worcester, Mass

Belt Holders.
Phelps Bros & Co, Wellington, O

Belt Lacing. (Steel.)
Bristol Co, Waterbury, Conn

Blast Furnaces.
Girard Boiler & Mfg Co, Girard, O
Means & Fulton Iron Works, Birmingham, Ala
Riter-Conley Mfg. Co, 55 Water st, Pittsburg, Pa

Blocks and Sheaves.
American Hoist & Derrick Co, St Paul, Minn
Boston & Lockport Blk. Co, 160 Commercial st, Boston
Hunt, C W Co, Richm'd Terrace, W N Brighton, S I
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
Yale & Towne Mfg Co, 9-13 Murray st, New York

Blowers.
American Blower Co, Detroit, Mich
Boston Blower Co, Business st, Hyde Park, Mass
Buffalo Forge Co, Buffalo, N Y
Mass. Fan Co, Waltham Mass
Roots, P H & F M Co, Connersville, Ind
Sturtevant, B F Co, Boston, Mass

Blue Printing Apparatus.
Elliott Electric Blue Print Co, Pittsburg.
Keuffel & Esser Co, 127 Fulton st, New York
Pittsburg Blue Print Co, 1505-C Park bldg, Pittsburg
Soltmann, E G, 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston
Young, C H & Co, 15 Exchange st, Boston

Blue Print Paper.
Elliott Electric Blue Print Co, Pittsburg
Spaulding Print Paper Co, 44 Federal st, Boston
(see also Instruments, Engineering, etc.)

Boiler Supplies.
Glasgow Iron Co, Pottstown, Pa

Boilers.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bacon, Earle C, 26 Cortlandt st, New York
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Fairbanks, Morse & Co Chicago
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Works, East Boston, Mass
Iroquois Iron Works, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego, N Y
Leffel, Jas. & Co, Springfield, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Morris Machine Works, Baldwinsville, N Y
McNeil, Jas. & Bro, 29th & Railroad sts, Pittsburg
Means & Fulton Iron Works, Birmingham, Ala
Mundy, J S, Newark, N J
Petroleum Iron Wks Co, Washington, Pa
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Sharon Boiler Works, Sharon, Pa
Sullivan Machinery Co, 135 Adams st, Chicago
Variety Iron Works Co, Cleveland, Ohio
Warren City Tank & Boiler Works, Warren, O

Boilers (Water Tube.)
Babcock & Wilcox Co, 29 Cortlandt st, New York
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Keeler, E, Co, Williamsport, Pa
Meehan Boiler Construction Co, Lowellville O
Walsh, W J, Holyoke, Mass

Bolt Clippers.
Helwig Mfg Co, St. Paul, Minn

Bolts. (Expansion.)
Church, Isaac, Toledo, O
Evans, F H, 596 Kent ave, Brooklyn
Steward & Romaine Mfg Co, 120 N 6th st, Phila

Boots and Shoes.
Putman, H J, & Co, 38 Bridge sq, Minneapolis

Brakes.
Brill, J G Co, Philadelphia, Pa
(see also Air Brakes.)

Brass Rolling Machinery.
Poole, Robert, & Son Co, Baltimore, Md

Brick.
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Egyptian Silica Brick Process Co, Fredericksburg, Va
Jackson, John H, Albany, N Y
Johnsonburg Vit Brick Co, Johnsonburg, Pa
Mack Mfg Co, New Cumberland, West Virginia
McAvoy Vit Brick Co, 1345 Arch st, Philadelphia
Purington Paving Brick Co, Galesburg, Ill
Tomkins, Calvin, 120 Liberty st New York
Western Brick Co, Danville, Ill

Brick. (Fire.)
Maurer, Henry, & Son, 422 E 23d st, New York
New York Pottery Co, 12th ave & 36th st, N Y
Syracuse Stoneware Co, Syracuse, N Y

Brick Machinery.
Bonnot Co, Canton, Ohio
Drake, C T, 300 W Jackson Boulevard Chicago

Bridge (Concrete).
Aberthaw Construction Co, Boston, Mas

Bridge Operating Machinery.
Edwards, Jos. & Co, 414 Water st, New York
Vulcan Iron Works, Chicago

Bridge Railings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia, Pa
King Bridge Co, Cleveland, O
Massillon Bridge Co, Massillon, Ohio
Stupp Bros, Bridge & Iron Co, St. Louis, Mo

Bridges and Buildings.
American Bridge Co, New York
Baltimore Bridge Co, Bush st & B & O R R, Baltimore
Bellefontaine Bridge & Iron Co, Bellefontaine, Ohio
Berlin Construction Co, Berlin, Conn
Boston Bridge Works, 47 Winter st, Boston, Mass
Champion Bridge Co, Wilmington, Ohio
Chicago Bridge & Iron Co, Chicago
Clinton Bridge & Iron Works, Clinton, Iowa
Columbia Bridge Co, Pittsburg
Concrete-Steel Engineering Co, Park Row bldg N Y
Easton Foundry & Machine Co, Easton, Pa
Eichleay, Jr., & Co., John, Pittsburg, Pa
Fort Pitt Bridge Works, Pittsburg, Pa
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Havana Bridge Works, Montour Falls, N Y
Joliet Bridge & Iron Co, Joliet, Ill
Kenwood Bridge Co, First Nat. Bank bldg, Chicago
King Bridge Co, Cleveland, Ohio
Massillon Bridge Co, Massillon, Ohio
McClintic-Marshall Construction Co, Pottstown, Pa
Mo. Valley Bridge & Iron Works, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, Ohio
New Castle Bridge Co Indianapolis
New England Structural Co, Boston, Mass
Parker, F A, 202-208 North First st, Terre Haute Ind
Passaic Rolling Mill Co, Paterson, N J
Penn Bridge Co, Beaver Falls, Pa
Pennsylvania Steel Co, Steelton, Pa
Phœnix Bridge Co, Phœnixville, Pa
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Rogers Iron Co, Springfield, O
San Francisco Bridge Co, 220 Market st, San Franc
Scaife, W B, & Sons Co, Pittsburg, Pa
Shoemaker, Lewis F, & Co, Harrison bldg, Pa
Standard Bridge Co, Omaha
Strobel, C L, Monadnock block, Chicago, Ill
Stupp Bros. Bridge & Iron Co, St. Louis, Mo
Vaile & Young, Baltimore, Md
Variety Iron Works Co, Cleveland, Ohio
Virginia Bridge & Iron Co, Roanoke, Va
Wabash Bridge & Iron Works, Wabash, Ind

Bridges (Rolling Lift.)
Scherzer Rolling Lift Bridge Co, Chicago

Buckets (Automatic.)
Brown Hoisting Machinery Co, Cleveland
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Stuebner, G L, Long Island City, N Y
Union Iron Works, Hoboken, N J

Bumping Posts.
McCord & Co, 1445 Old Colony bldg, Chicago
Mechanical Mfg Co, Chicago

Bunkers (Suspension.)
Berquist, A S, 515 Bedford ave, Brooklyn, N Y

Burners (Oil.)
Hammel, C A 120 Fifth st, Los Angeles, Cal

Cableways (Suspension.)
Bacon, Earle C, 26 Cortlandt st, New York
Beatty M, & Sons, Welland, Ont
Broderick & Bascom Rope Co, St. Louis
Flory, S, Mfg Co, Bangor, Pa
Lambert Hoisting Engine Co, Newark, N J
Leschen, A, & Sons Rope Co, St. Louis
Lidgerwood Mfg Co, 96 Liberty st, New York
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
N. J. Foundry & Machine Co, 9 Murray st, N Y
Trenton Iron Co, Trenton, N J
United Telpherage Co, 20-22 Broad st, New York

Calking Yarn and Tools.
Ogden, J. Edward. Co, 149 Cedar st, New York

Car Couplers.
McConway & Torley Co Pittsburg, Pa
Railroad Supply Co, Bedford bldg, Chicago

Car Heating and Lighting.
Brill Co, J G, Philadelphia, Pa
Safety Car Heating & Lighting Co, 160 B'way, N Y

Car Trucks.
Brill, Co, J G. Philadelphia, Pa

Car Wheels.
Brill Co, J G, Philadelphia, Pa
Cayuta Wheel & Foundry Co, Sayre, Pa
Ramapo Iron Works, Hillburn, N Y

Cars (Dump, Plantation, Flat, Hand, Logging Mining and Freight.)
Apex Equipment Co, 11 Broadway, New York
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Efros Co, Chas, Bayonne, N J
Fairbanks, Morse & Co, Chicago
Ingoldsby Auto. Car Co, Chemical bldg, St. Louis
Koppel, Arthur, 68 Broad st, New York
Pressed Steel Car Co, Pittsburg, Pa
Ramapo Iron Works, Hillburn, N Y
Standard Steel Car Co, Frick bldg, Pittsburg
Steubner, G L, 176 Third st, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng Wks, 29 Broadway, New York

Cars (Narrow Gage.)
Brill, J G Co, Philadelphia, Pa
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Koppel, Arthur, 68 Broad st, New York
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Passenger & Freight.)
Brill, J G, Co, Philadelphia, Pa
Koppel, Arthur, 68 Broad st, New York

Cars (Wrecking & Ditching.)
Bucyrus Co, S. Milwaukee, Wis
Case Mfg Co, Columbus, O
Osgood Dredge Co, 37 State st, Albany N Y

Castings (Brass.)
Campbell, J B, Brass Works, Cascade st, Erie Pa

Castings (Iron.)
Builders Iron Foundry, Providence, R I
Brooks, T H, & Co, Cleveland, O
Coldwell-Wilcox Co, Newburg, N Y
Columbia Machine Works, 247 Chestnut st, Brooklyn
Crane & Co, Inc, A M, The Rookery, Chicago
Dimmick Pipe Co, Birmingham, Ala
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Du Bois Iron Works, Du Bois, Pa
Easton Foundry & Machine Co, Easton, Pa
Fox, John & Co, 253 Broadway, N Y
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Genesee st, Utica, N Y
Poole, Robert, & Son Co, Baltimore, Md
Reading Foundry Co, Ltd, Reading, Pa
Sessions Foundry Co, Bristol, Conn
Variety Iron Works Co, Cleveland, O
Warren Foundry & Machine Co, 160 Broadway, N Y
(see also Sewer and Street Castings)

Castings (Steel.)
Crane & Co, Inc, A M, The Rookery, Chicago

Cement (Portland.)
Alpha Portland Cement Co, Easton, Pa
Alsen's Am Portland Cement Wks, 45 Broadway, N Y
American Cement Co, 22 S 15th st, Philadelphia, Pa
Atlas Portland Cement Co, 30 Broad st, New York
Buckeye Portland Cement Co, Bellefontaine, Ohio
Coplay Cement Mfg Co, 1123 Broadway, N Y
Empire Portland Cement Co, Warners, N Y
Fredenburg & Lounsbury, Metropolitan bldg, N Y
French, Samuel H, & Co, Philadelphia
General Supply & Construct'n Co, 8-10 Bridge st, N Y
Glens Falls Portland Cement Co, Glens Falls, N Y
Hartranft, Wm G, Cement Co, Philadelphia
Helderberg Cement Co, Albany, N Y
Illinois Steel Co, Rookery, Chicago
Kelley Island Lime & Transport Co, Cleveland, Ohio
Lawrence Cement Co, 1 Broadway, New York
Lehigh Portland Cement Co, Allentown, Pa
Sinclair & Babson, 45 Broadway, New York
Snyder, Hiram, & Co, 229 Broadway, New York
St Louis Portland Cement Co, St Louis
Thorn Cement Co, 112 Church st, Buffalo, N Y
Vulcanite Portland Cement Co, 160 Fifth ave, N Y
Warner, Chas, Co, Wilmington, Del

Cement (Rosendale.)
Consolidated Rosendale Cem. Co, 26 Cortlandt st, N Y
Coplay Cement Mfg Co, 1123 Broadway, N Y
Cumberland (Md.) Cement & Mfg Co, P O Box 264
Meacham & Wright, Chamber of Commerce, Chicago
Milwaukee Cement Co, Milwaukee, Wis
Snyder, Hiram, & Co, 229 Broadway, New York
Tomkins, Calvin, 120 Liberty st, New York
Union Akron Cement Co, 141 Erie st, Buffalo, N Y
Western Cement Co, Louisville, Ky

Cement Kilns and Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bartlett, C O, & Snow Co, Cleveland, Ohio
Bonnot Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark, J C, Box 525, Atlanta, Ga
Dodge Mfg Co, Mishawaka, Indiana
Kent Mill Co, 170 Broadway, New York
Jeffrey Mfg Co, Columbus, Ohio
Smidth, F L, & Co, 66 Maiden Lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Vulcan Iron Works, Wilkesbarre, Pa
West Pulverizing Mach. Co, Jersey City, N J

Cement Mixer.
Alexander Iron Works, Syracuse, N Y

Chain Blocks.
Yale & Towne Mfg Co, 9-13 Murray st, New York

Chains.
Newhall Chain Forge & Iron Co, 9 Murray st, N Y

Chain-Making Machinery.
Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio

Channelers.
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill

Chemists.
McKenna, Chas. F, 221 Pearl st, N Y
(see also Laboratories.)

Chimneys. (Brick.)
Custodis, A, Chimney Const'n Co, Bennett bldg, N Y

Coal and Ore Handling Machinery.
Aultman Co, Canton, Ohio
Bacon, Earle C, 26 Cortlandt st, New York
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Brown Hoisting Machinery Co, Cleveland, O
Exeter Machine Works, Pittston, Pa
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, Ohio
King Bridge Co, Cleveland, Ohio
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, N Y
Link Belt Engineering Co, Nicetown, Phila
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, New York
N. J. Foundry & Machine Co, 9 Murray st, New York
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Robins Conveying Belt Co, 14-21 Park Row, N Y
Steubner, G L, 175 Third st, Long Island City, N Y

Colleges (Engineering.) (see page IV.)

Concentrators.
Allis-Chalmers Co. Home Ins bldg, Chicago

Concrete Mixers.
Clyde Iron Works, Duluth, Minn
Cockburn Barrow & Mach. Co, Jersey City, N J
Contractor's Plant Co, 37 Pittsburg st, Boston
Drake, C T, 300 W Jackson Boulevard, Chicago
Fisher & Saxton Co, 123 G st, N E, Washington
Iroquois Iron Works, Buffalo
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
McKelvey Concrete Mach'y Co, Security bldg, Chicago
Municipal Eng & Contr'g Co, Manhattan bldg, Chicago
Ransome Concrete Mach'y Co, 11 Broadway, N Y
Smith, T L, 134 Tenth st, Milwaukee

Concrete Mold.
Farrell, Thos C, Washington, New Jersey

Condensers.
Alberger Condenser Co, 95 Liberty st, N Y
Allis-Chalmers Co, Home Ins bldg, Chicago
Davidson M T, 58 Keap st, Brooklyn, N Y
Dean Bros, Steam Pump Works, Indianapolis, Ind
Epping-Carpenter Co, Pittsburg
Guild & Garrison, So 10th st, Brooklyn, N Y
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Conduits (Pipe.)
American Vitrified Conduit Co, 170 Broadway, N Y
Blackmer & Post Pipe Co, St. Louis, Mo
Camp, H B Co, 170 Broadway, New York
Eppinger & Russell Co, 66 Broad st, New York
Field, C J, 29 Broadway, New York
Standard Vitrified Conduit Co, 39 Cortlandt st, N Y
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Contractors.
Abbot-Gamble Contracting Co, St. Louis and N Y
American Pipe Mfg Co, 112 N Broad st, Philadelphia
Bates & Rogers Const'n Co, 1208 Manhattan bldg, Chic
Cook Well Co, St. Louis, Mo
Eastern Construction Co, 48 Classon ave, Brooklyn, NY
Eichleay, John, Jr, Co, Pittsburg
Esson, W A, & Co 1137 Stock Exchange bldg, Chicago
Foundation & Contracting Co, 37 Nassau st, New York
Gahagan, W H, 189 Montague st, Brooklyn, N Y
Gest, G M, Cincinnati and New York
Gillespie, T A, Co, Westinghouse bldg, Pittsburg, Pa
McCabe, Jas. F, 504 Equitable bldg, Baltimore, Md
McMullen, Arthur & Co, 13-21 Park Row bldg, N Y
O'Rourke, John F, Park Row bldg, New York
Philippine Eng & Const'n Co, P.O. Box 572, Manila, P.I
Phillips & Worthington, 11 Broadway, New York
Quigley, R M, & Co, Laclede bldg, St. Louis, Mo
Regan & Mulock, D P, 4429 Chestnut st, Philadelphia
Snare & Triest, 39 Cortlandt st, New York
United Eng & Con Co, 13-21 Park Row, New York
(see also Artesian Wells; Asphalt Paving; Bridges; Dredging; Wharf and Pier Builders.)

Contractors' Tools and Supplies.
Bond, H L, & Co, Pearl & Purchase sts, Boston, Mass
Crane & Co, Inc, A M, The Rookery, Chicago
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia

Conveyors. (See Hoisting and Conveying Machinery; also see Trench Machines.)

Cooling Towers.
Alberger Condenser Co, 95 Liberty st, New York
Davidson, M T, 53 Keap st, Brooklyn, N Y
Worthington, Henry R, Brooklyn, N Y

Cranes.
Am. Hoist & Derrick Co, St. Paul, Minn
Brown Hoisting Machinery Co, Cleveland, O
Bucyrus Co, S Milwaukee, Wis
Case Mfg Co, Columbus, Ohio
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Industrial Works, Bay City, Mich
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Manning, Maxwell & Moore, 85 Liberty st, New York
Marion Steam Shovel Co, Marion, Ohio
Niles Tool Works Co, 136-138 Liberty st, New York
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Wood, R D, & Co, Philadelphia, Pa

Cranes (Portable).
North Penn Iron Co, 3d & Sedgley ave, Philadelphia

Creosoting.
American Creosote Works, New Orleans
Atlantic Creo & Wood Pres Works, Norfolk, Va
Carbolineum Wood Preserving Co, 13 Park Row, N Y
Eppinger & Russell Co, 66 Broad st, New York
International Creosoting & Con. Co, Galveston, Tex
New Orleans Wood Pres Works, New Orleans, La
Norfolk Creosoting Co, Norfolk, Va
U S Wood Preserving Co, 29 Broadway, New York
West Pascagoula Creosote W'ks, W Pascagoula, Miss
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Crucibles.
Dixon, Jos., Crucible Co, Jersey City, N J

Damper Regulators.
d'Este, Julian Co, 15 Canal st, Boston

Derrick and Derrick Fittings.
American Hoist & Derrick Co, St. Paul, Minn
Byers, John F, Machine Co, Ravenna, Ohio
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Dobbie Foundry & Machine Co, 138 Dey st, N Y
Hayward Co, 97 Cedar st, New York
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
Lambert Hoisting Engine Co, Newark, N J

Diamond Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago

Differential Hoists.
Boston & Lockport Block Co, Boston, Mass

Ditching and Excavating Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, S. Milwaukee, Wis
Hayward Co, 97 Cedar st, New York
Marion Steam Shovel Co, Marion, Ohio
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, 12 Post Office Square, Boston
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago
Vulcan Iron Works Co, Toledo
Western Wheeled Scraper Co, Aurora, Ill

Diver.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Lowe Wrecking & Diving Co, 2 Coenties slip, N Y

Diving Apparatus
Morse, Andrew J, & Son, 140 Congress st, Boston
Schrader's, A, Son, 32 Rose st, New York

Docks (Composite and Steel Floating).
Crandall, H I, & Son Co, East Boston, Mass

Doors and Door Fittings.
Kinnear Mfg Co, Columbus, Ohio
N. J. Foundry & Machine Co, 9 Murray st, N Y
Wilson, J Godfrey, 3 W 29th St, N Y

Drafting Tables.
Hein Furniture Co, Toledo, O

Draftsmen's Supplies. (see Instruments.

Drain Tile (see Pipe, Vitrified Clay.)

Dredging and Dredging Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bowers, A B, San Francisco, Cal
Bucyrus Co, S Milwaukee, Wis
Dredging & Filling Co, 15 Cortlandt st, New York
Edwards, Jos., & Co, 414 Water st, New York
Ellicott Machine Co, Baltimore, Md
Falcon, Jos, G, 1110 Ayres Court, Evanston, Ill
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicago
Hayward Co, 97 Cedar st, New York
Lawrence Machine Co, Lawrence, Mass
Marion Steam Shovel Co, Marion, Ohio
Morris Machine Works, Baldwinsville, N Y
Mundy, J S, Newark, N J
Osgood Dredge Co, Albany, N Y
Smith, Theo., & Bro, Jersey City, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works Co Toledo

Drilling and Boring Machines (Portable)
Knight Mfg Co, Canton, Ohio
Philadelphia Pneumatic Tool Co, Philadelphia
Stow Flexible Shaft Co, 26th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y
(see also Pneumatic Tools; also Rock Drills

Drop Forgings.
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila

Drop Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Dry Docks (Marine Railway).
Crandall, H I, & Son Co, East Boston, Mass

Dryers (Cement).
American Process Co, 62 William st, New York
Bartlett, C O, & Snow Co, Cleveland, O
Crown Dryer Co, 129 Euclid ave, Cleveland
Cummer, F D, & Son Co, Cleveland, O
Ruggles Coles Engineering Co, 41 Cortlandt st, N Y
West Pulverizing Machine Co, Jersey City, N J

Dynamite (see Explosives).

Dynamos.
C & C Electric Co, Central R R bldg, New York
Coho & Co, H B, 114 Liberty st, New York
General Electric Co, Schenectady, N Y
Storey Motor & Electric Co, Harrison, N J
Stow Mfg Co, Binghamton, N Y
Westinghouse Electric & Mfg Co, Pittsburg, Pa

Economizers (Fuel).
Green Fuel Economizer Co, Matteawan, N Y
Broomell, Schmidt & Steacy Co, York, Pa

Electric Storage Batteries.
Electric Storage Battery Co, Philadelphia

Elevators.
Marine Engine & Machine Co, 1123 Broadway, N Y
Morse Elevator Works, Philadelphia
Otis Elevator Co, 71 Broadway, N Y

Employment Bureaus.
Boston Engineering Agency, 7 Water st, Boston
Brotherhood Steam Shovel & Dredge Engrs., Chicago
Cleveland Engineering Agency, Box 71, Sta. B, Cleve
Engineering Agency, Monadnock blk, Chicago, Ill
Engineering Employment Bureau, Syracuse N Y
Hapgood Bureau, 257 Broadway, N Y
New York Engineering Agency, 35 Warren st, N Y

Engines. (Gas and Gasoline).
American Well Works, Aurora, Ill
Backus Water Motor Co, Newark, N J
Chase Machine Co, Cleveland
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Fairbanks, Morse & Co, Chicago, Ill
Mietz & Weiss, 128 Mott st, New York
New Era Iron Work Co, 37 Dale ave, Dayton, O
Otto Gas Engine Works, Philadelphia, Pa
Snow, T W, (Otto Engine) 360 Dearborn st, Chicago
Springfield Gas Engine Co, Springfield, O
Struthers-Wells Co, Warren, Pa
Temple Pump Co, 15th Place, Chicago
U. S. Wind Eng. & Pump Co, 20 Water st, Batavia, Ill
(see also Engines, Oil.)

Engines (Hoisting).
American Hoist & Derrick Co, St. Paul, Minn
Bacon, Earle C, 26 Cortlandt st, New York
Beatty, M, & Sons, Welland, Ont
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F., Machine Co, Ravenna, Ohio
Carlin's, Thos., Sons, Allegheny, Pa
Chase Machine Co, Cleveland
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Fairbanks, Morse & Co, Chicago, Ill
Flory, S, Mfg Co, Bangor, Pa
Hunt, C W., Co, Richmond Terrace, W N Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, New York
Monighan's Machine Works, 813 Carroll ave, Chicago
Mundy, J S, Newark, N J
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Vulcan Iron Works, Wilkesbarre, Pa
(see also Electric Hoists.)

Engines (Marine).
Buffalo Forge Co, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego N Y
Morris Machine Works, Baldwinsville, N Y
Otto Gas Engine Works, Philadelphia, Pa

Engines (Oil)
Aultman Co, Canton, Ohio
Mietz & Weiss, 128 Mott st, New York

Engines (Portable).
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Port Huron Engine Co, Port Huron, Mich

Engines (Steam).
Allis-Chalmers Co. Home Ins bldg, Chicago
Buffalo Forge Co, Buffalo, N Y
Erie Pump & Engine Co, Erie, Pa
Fairbanks, Morse & Co, Chicago
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicago
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Lawrence Machine Co, Lawrence, Mass
Leffel, Jas. & Co, Springfield, O
Morris Machine Works, Baldwinsville, N Y
Southwark Foundry & Machine Works, Philadelphia
Sturtevant, B F, Co, Boston, Mass
Struthers, Wells & Co, Warren, Pa
Vulcan Iron Works, Wilkesbarre Pa

Engines (Traction).
Aultman Co. Canton, O
Heisler, Chas. L, Erie, Pa
Kelly, O S, Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich

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ADVERTISERS' CLASSIFIED DIRECTORY.

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Excavators and Excavating Machinery (see Ditching and Excavating Machinery and Steam Shovels.)

Expanded Metal.
Assoc Exp Metal Cos, Room 1209, 256 Broadway, N Y
General Fireproofing Co, Youngstown, O
Truss Metal Lath Co, 40 Gold st, New York
Youngstown Iron & Steel Roofing Co, Youngstown, O

Explosives.
Explosives Mfg Co, Elmira, N Y
Electric Exploder Co, 120 Liberty st, N Y
Kirk, Arthur & Son, Co, 910 Duquesne Way, Pittsburg

Faucets.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Feed Water Heaters.
Allis-Chalmers Co, Home Ins bldg, Chicago
Erie Machine Shops, Erie, Pa
Gem City Boiler Co, Dayton, O
Green Fuel Economizer Co, Matteawan, N Y
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Patterson, Frank L, & Co, 28 Church st, New York
Robertson, Jas. L, & Sons 192 Fulton st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O

Feed Water Purifiers.
Industrial Water Co, 126 Liberty st, New York
Pittsburg Filter Mfg Co, Pittsburg, Pa
Smith, W B, Perth Amboy, N J

Fencing. (Wire).
American Steel & Wire Co, New York & Chicago
Jones National Fence Co, Columbus, O
Lamb Wire Fence Co Adrian, Mich

Fillet. (Leather).
Butler, A G, 284 Pearl st, New York

Filing Cases.
Art Metal Construction Co, Jamestown, N Y
General Fireproofing Co, Youngstown, O

Filter Presses.
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio

Filters.
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Deutsch, W M, 141 Broadway, N Y
Jackson Filter Mfg Co, St Louis
Loomis-Manning Filter Co, Philadelphia, Pa
Maignen Filtration Co, 1310 Arch st, Philadelphia
N Y Continental-Jewell Co, 15 Broad st, N Y
Norwood Engineering Co, Florence, Mass
Pittsburg Filter Mfg Co, Pittsburg, Pa
Ross Valve Co, Troy, N Y
Scaife, Wm. B, & Sons Co, Pittsburg

Filters (Oil).
Burt Mfg Co, Akron, O
Robertson, Jas L, & Sons, 192 Fulton st, New York

Fire Department Supplies.
Morse, Andrew J, & Son, 140 Congress st, Boston, Mass

Fire Proofing.
Aberthaw Construction Co, Boston, Mass
Berger Mfg Co, Canton, O
Bromley, A H, Jr, 112 N Broad st, Philadelphia
Hennebique Patents 1123 Broadway, N Y
Metropolitan Fire Proofing Co, Trenton, N J
Roebling Construction Co, 121 Liberty st, New York
St Louis Expanded Metal Fireproofing Co, St Louis
Wight, W N, & Co, 160 Fifth ave, New York
(see also Expanded Metal, also Concrete Steel Construction.)

Fire Proofing (Hollow Tile).
Maurer, Henry & Sons, 422 E 23d st, New York

Fire Proofing (Wood).
Electric Fireproofing Co, 19th st, and East River, N Y

Fittings (Flanged).
McLeod Co, 95 Liberty st, New York

Flexible Pipe Joint.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich
Rempis & Gallmeyer Foundry Co, Grand Rapids Mich

Flexible Shafts.
Stow Flexible Shaft Co, 16th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y

Flue Lining (Fire Clay).
Jackson, John H, Albany, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th sts, N Y
Syracuse Stoneware Co, Syracuse, N Y

Flush Tanks.
Pacific Flush Tank Co, 48 La Salle st, Chicago

Fly Wheels.
Poole, Robert, & Son Co, Baltimore, Md

Forges (Portable).
Buffalo Forge Co, Buffalo, N Y
Roots, P H & F M, Co, Connersville, Ind
Tate, Jones & Co, Pittsburg Pa

Forgings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Baker, Jas H, Mfg Co, 503 Park bldg, Pittsburg, Pa
Brill, J G, Co, Philadelphia, Pa
Cleveland City Forge & Iron Co, Cleveland
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila
Pennsylvania Steel Co, Steelton, Pa

Friction Clutches.
Brown Hoisting Machinery Co, Cleveland
Dodge Mfg Co, Mishawaka, Indiana
Link Belt Engineering Co, Nicetown, Philadelphia
Smith, S Morgan, Co, York, Pa

Frogs, Switches and Crossings.
Elliot Frog & Switch Co, East St. Louis, Ill
N Y Switch & Crossing Co, Hoboken, N J
Pennsylvania Steel Co, Steelton, Pa
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Fuel Economizers (see Economizers).

Furnaces (Gas).
American Gas Furnace Co, 23 John st, New York

Furnaces (Oil).
Petroleum Iron Works, Washington, Pa
Tate, Jones & Co, Empire bldg, Pittsburg

Furniture (Steel).
General Fireproofing Co, Youngstown, O

Gages (Steam).
Crosby Steam Gage & Valve Co, Boston

Galvanized Iron and Steel.
Am Sheet Steel Co Battery Park bldg, New York

Galvanizing Kettles.
Columbiana Boiler Co Columbiana, Ohio
Enterprise Boiler Co, Youngstown, Ohio

Garbage Dump Carts (see Wagons and Carts).

Garbage Furnace.
Morse-Boulger Destructor Co, 39 Cortlandt st, N Y
Smith-Siemens Garbage Furnace, 141 Broadway, N Y

Gas Fittings.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Gas Holders.
Wood, R D, & Co, 400 Chestnut st, Philadelphia
(see also Stand-Pipes and Tanks.)

Gas Machinery.
American Gas Furnace Co, 23 John st, New York
Gas Machinery Co, Cleveland, O
National Drill & Mfg Co, Chicago, Ill
Norwalk Iron Works, South Norwalk, Conn
Roots, P H, & F M, Co, Connersville, Ind
Wood, R D, & Co, Philadelphia, Pa

Gas Works.
Gas Machinery Co, Cleveland, Ohio

Gaskets.
McCord & Co, 1445 Old Colony bldg, Chicago
U S. Mineral Wool Co, 143 Liberty st, New York

Gates (Railway).
Jones National Fence Co, Columbus, O
Pneumatic Signal Co, 1122 Broad-Exchange bldg, N Y

Gearing.
Caldwell, H W, & Son Co, Chicago
Morse Elevator Works, Philadelphia
Poole, Robert, & Son Co, Baltimore, Md
Smith, S. Morgan, Co, York, Pa

Gear-Wheels.
Taylor Iron & Steel Co, High Bridge, N J

Gloves (Hand Made).
Luther, J P, Glove Co, 526 Pearl St, Berlin, Wis

Governors (Water-Wheel).
Lombard Governor Co, 36 Whittier st, Boston
Replogle Governor Works, Chestnut st, Akron, O

Graders.
Austin Mfg Co Manhattan bldg, Chicago
Port Huron Engine Co, Port Huron, Mich
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Grain Elevators (see Tanks, grain storage.)

Granite (see Stone. also Paving Blocks).

Graphite.
Detroit Graphite Mfg Co, Detroit, Mich
Dixon Jos., Crucible Co, Jersey City, N J
Goheen Mfg Co, Canton, Ohio
Internat'l Acheson Graphite Co, Niagara Falls, N Y

Grate Bars.
Dobbie Foundry & Mach Co, 138 Dey st, N Y
Robertson, Jas L, & Sons, 192 Fulton st, New York

Greenhouses.
National Skylight & Const'n Co, 120 Liberty st, N Y
Plenty, Josephus, Jersey City, N J

Hanger (Joist).
Duplex Hanger Co, Cleveland, Ohio

Headlights (Locomotive).
Brill, J G, Co, Philadelphia
Dressel Ry Lamp Works, 3876 Park ave, New York
Railroad Supply Co, Bedford bldg, Chicago

Heating and Ventilating (Steam & Hot Water
American Blower Co, Detroit
Am. District Steam Heating Co, Lockport, N Y
Keeler, E, Co, Williamsport, Pa
Mass. Fan Co., Waltham, Mass

Hoisting Engines (see Engines, Hoisting).

Hoisting and Conveying Machinery.
Aultman Co, Canton, O
Beatty, M, & Sons, Welland, Ont
Bartlett, C O, & Snow Co, Cleveland, O
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F, Machine Co, Ravenna, O
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Cresson Co Geo. V, Philadelphia
Carson Trench Machine Co, Boston, Mass
Dodge Mfg Co, Mishawaka, Indiana
Exeter Machine Works, Pittston, Pa
Garland, M, Co, Bay City, Mich
Heyl & Patterson, 49 Water st, Pittsburg
Hunt, C W, Co, Richmond Terrace, W N Brighton NY
Jeffrey Mfg Co, Columbus, Ohio
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Lambert Hoisting Engine Co, Newark, N J
Link Belt Engineering Co, Nicetown, Philadelphia
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, N Y
Pawling & Harnishfeger, 167 Clinton st, Milwaukee
Robins Conveying Belt Co, 14-21 Park Row, N Y
Steel Cable Engineering Co, 120 Liberty st, New York
Trenton Iron Co, Trenton, N J
Union Iron Works, Hoboken, N J
United Telpherage Co, 20-22 Broad st, N Y

Hoists (Electric).
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg. Co, 96 Liberty st, N Y
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Rawson & Morrison Mfg Co, Cambridgeport, Mass
United Telpherage Co, 20-22 Broad st, New York

Hoists (Pneumatic).
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 1212-17 Herman bldg, Milwaukee

Hooks (Hoist, Grab, etc.)
Baker, Jas. H, Mfg Co, 503 Park bldg, Pittsburg
Roebling's, John A. Sons Co, Trenton, N J

Hose (Metal).
Moore Chas. C, & Co, 32 First st, San Francisco

Hose (Rubber).
McKiernan Drill Co, 170 Liberty st, N Y

Hose (Suction).
Edson Mfg Co, 255 Atlantic ave, Boston

Hydrants and Valves.
Bourbon Copper & Brass Works, Cincinnati, O
Cayuta Wheel & Foundry Co. Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Clow, J B & Sons, Lake & Franklin sts. Chicago
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Dimmick, J K, & Co, 1949-51 Drexel bldg, Phila
Drummond, M J, & Co, 192 Broadway, N Y
Fox, John & Co, 253 Broadway, N Y
Kennedy Valve Mfg Co, 50 Beekman st, N Y
Loetzer Valve & Mfg Co, Towanda, Pa
Ludlow Valve Mfg Co, Troy, N Y
McLean, John, 298 Monroe st, New York
Millar, Chas. & Son, Co, Utica, N Y
Norwood Engineering Co, Florence, Mass
Reading Foundry Co, Ltd, Reading, Pa
Ross Valve Co, Troy, N Y
Smith, A P, Mfg Co, Newark, N J
Thompson, J, & Co, Philadelphia, Pa
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Jacks.
Watson-Stillman Co 210 E. 43d st, New York

Hydraulic Leather Packing.
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Detroit Leather Specialty Co, 900 Michigan av, Detroit

Hydraulic Machinery.
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Deming Co, Salem, Ohio
Pelton Water Wheel Co, 134 Main st, San Francisco
Watson-Stillman Co, 210 E 43d st, New York
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Presses.
Watson-Stillman Co, 204 E 43d st, New York
Wood, R D, & Co, 400 Chestnut st, Philadelphia

Hydraulic Rams.
Pelton Water Wheel Co, 134 Main st, San Francisco

Ice and Refrigerating Machinery.
Featherstone Foy & Mach Co, 348 N Halsted, Chicago

Indicators (Steam Engine).
Ashcroft Mfg Co, 85 Liberty st, New York
Crosby Steam Gage & Valve Co, Boston, Mass
Robertson, Jas L. & Sons, 192 Fulton st, N Y

Injectors.
Hayden & Derby Mfg Co. 83 Liberty st, New York
Lunkenheimer Co. Cincinnati, Ohio

Instruments (Engineering, Drafting).
Ainsworth, Wm, & Sons, Denver Colorado
Aloe, A S, Co, 414 N Broadway, St. Louis, Mo
Altenheder, Theo, & Sons, 945 Ridge ave, Phila, Pa
Archts' & Engrs' Supply Co, 1011 Walnut st, Kan. City
Beckman, L, 57 Adams st, Toledo, Ohio
Berger, C L, & Sons, 37 Williams st, Boston, Mass
Brandis, F E, Sons & Co, 814 Gates ave, Brooklyn, NY
Brown & Sharpe Mfg Co, Providence, R I
Buff & Buff Co, J F Boston, Boston, Mass
Dietzgen, Eugene, Co, 181 Monroe st, Chicago
Engineers' Instrument Exchange, Scranton, Pa
Gurley, W & L E, Troy, N Y
Hardtmuth, L & C, 49 Barclay st, New York
Heller & Brightly Spring Garden st & Ridge av, Phila
Hetterschied Mfg Wks, Grand Rapids, Mich
Keuffel & Esser Co, 127 Fulton st New York
Knight, F C, & Co, 400 Locust ave, Philadelphia Pa
Koelsch & Co, 138 Fulton st, New York
Ledder, G G, 302 School st, Boston
Lietz, A, Co, 422 Sacramento st, San Francisco, Cal
Mahn & Co. 300-302 Olive st, St. Louis
Pfister, Herm, 428 Plum st, Cincinnati, O
Prince, L M, 108 West 4th st, Cincinnati, O
Queen & Co, Inc, Philadelphia, Pa
Saegmuller, G N, Washington, D C
Sala, J C, 429 Montgomery st, San Francisco
Schwencke, Kirk & Co, 28 Church st, New York
Soltmann, E G, 123 E 42d st, New York
Stackpole & Bro, 39 Fulton st, New York
Stanley, W F, & Co, Great Turnstile, Holborn, London
Steckenreiter Mfg Co, Chicago, Ill
Ulmer, J C, & Co, 224 Champlain st, Cleveland, Ohio
Universal Drafting Mach Co, Blackstone bldg, Cleve
Weber, F, & Co, Philadelphia
Williams, Brown & Earle, 918 Chestnut st, Phila
Wittstock, P & R, Berlin, S. 59, Germany
Young & Sons, 43 N. 7th st, Philadelphia

Insulating Materials.
Standard Paint Co, 103 William st, New York

Iron Work (Ornamental).
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia Pa
Brooks, T H, & Co, Cleveland, O
Rogers Iron Co, Springfield, O
Schrieber, L, & Sons Co, Cincinnati, O
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Walton Iron Co, Cincinnati, O

Iron Work (Structural).
(see Structural Steel and Iron Work.)

Jacks
Duff Mfg Co, Allegheny, Pa
Norton, A O, 286 Congress st, Boston
Watson-Stillman Co, 210 E 43d st, N Y

Labor (Italian).
Greco, Jas, 108 Bayard st, New York
Italo-American Trust Co, 725 Carpenter st, Phila
Yuzzolino, N, 73 Mulberry st, New York

Laboratories (Chemical and Testing).
Booth, Garrett & Blair, Philadelphia, Pa
Hunt, R W, & Co, Rookery, Chicago
McKenna, Chas F, 221 Pearl st, New York
Pittsburg Testing Laboratory, Pittsburg, Pa
Riehle Bros. Test & Machine Co, Philadelphia, Pa

Lamps (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Lathing (Metallic).
Berger Mfg Co, Canton, O
General Fireproofing Co, Youngstown, O
(see also Fireproofing.)

Lead (Pig).
Millar, Chas & Son Co, Utica, N Y
Ogden, J Edward Co, 147 Cedar st, New York

Lead Furnaces.
McLean, John, 298 Monroe st, New York
Ogden, J Edward Co, 147 Cedar st, New York
Union Iron Works, Hoboken, N J

Light (Contractors').
Kilson Hydro-Carbon Htg & Lighting Co, Phila
Macleod & Co. Walter, Cincinnati Ohio
Wells Light Co, 44 Washington st, New York

Locomotive Tires.
Latrobe Steel Co, 1200 Girard bldg, Philadelphia, Pa

Locomotives.
American Locomotive Co, 25 Broad st, New York
Baldwin Locomotive Works, Philadelphia, Pa
Heisler, Charles L, Erie, Pa.
Porter, H K, Co Pittsburg, Pa.

Locomotives (Contractors').
Avery, C F, 111 Liberty st, New York
Byers, John F, Machine Co, Ravenna, Ohio
Fitz-Hugh & Co, Chicago and New York
Porter, H K, Co, Pittsburg, Pa
Vulcan Iron Works, Wilkesbarre, Pa

Locomotives (Electric and Mining).
Baldwin Locomotive Works, Philadelphia, Pa
Brill, J G, Co, Philadelphia
General Electric Co, Schenectady, N Y
Jeffrey Mfg Co, Columbus, O
Koppel, Arthur, 66 Broad st, New York
Porter, H K, Co, Pittsburg, Pa
Westinghouse Electric & Mfg Co, Pittsburg

Locomotive Headlights.
(see Headlights, Locomotives.)

Locomotives (Second hand).
(See Railway Equipment, Dealers.)

Lubricants.
Dixon, Jos, Crucible Co, Jersey City, N J

Lubricators.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Lumber (Creosoted).
American Creosote Works, Ltd, New Orleans, La
Atlantic Creo & Wood Pres Wks, 10 Bridge St, N Y
Carbolineum Wood Pres Co, 13 Park Row, N Y
International Creosoting & Con Co, Galveston, Tex
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Portsmouth, Va
(see also Creosoting)

Lumber (Dock).
Vanderbilt & Hopkins, 126 Liberty st, New York

Machinery (Second hand).
Braden, Jas A, 514 Park Row bldg, New York
Briggs, Marvin, 12 Broadway, New York
Carlin, W J, 26th and Railroad st, Pittsburg, Pa
Carlin Machy & Supply Co, 186 Lacock st, Allegheny
Chicago House Wreck Co, W. 35th & Iron sts, Chicago
Contractors' Supply Co, 1531 Monadnock blk, Chicago
Donaldson & Newton, 421 Chestnut st, Philadelphia
Eiros Co, Chas, Bayonne, N J
Everson & Co, E W, Roxbury Crossing, Mass
Fitz-Hugh Co, Monadnock block, Chicago
Grant & Harper Machy Co, Park Row bldg, New York
Low, Edgar S. Co, Empire bldg, Pittsburg
National Con. Co, E Cambridge, Mass
Pease Car & Loco Works, 2-7 Dearborn st, Chicago
Saxton, J C, 18 Broadway, New York
Toomey, Frank, 127 N. 3d st, Philadelphia
Troy Public Works Co, 1 Mann bldg, Utica, N Y
Warren-Burnham Co, 7 East 42d st, New York
Whitney, O R, 39 Cortlandt st, New York
Young, E R, & Sons, Titusville, Pa

Machine Tools.
Manning, Maxwell & Moore, 85 Liberty st, New York
Niles Tool Works Co, 136-138 Liberty st, New York

Mail Chutes.
Cutler Mfg Co, Rochester, N Y

Manholes and Covers.
(See Sewer and Street Castings; also Castings, Iron.)

Measure (Rotary).
Steckenreiter Mfg Co, 98 Lake st, Chicago, Ill

Measuring Tapes. (Steel).
Chicago Steel Tape Co, 508 Temple Court, Chicago
Johnston, Robt, Wilkesbarre, Pa
Lufkin Rule Co, Saginaw, Mich
Starrett, L S, Co, 86 Crescent st, Athol, Mass

Merchandise Checks.
Am. Ry Supply Co, 24 Park Place, New York

Mechanical Draft.
American Blower Co, Detroit
Buffalo Forge Co, Buffalo, N Y
Sturtevant, B F, Co, Boston, Mass
(see also Blowers.)

Metal Hose (See Hose, Metal).

Meters (Current).
Berger, C L & Sons, 9 Province st, Boston, Mass

Meters (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Meters (Gas).
Pittsburg Meter Co East Pittsburg Pa

Meters (Water).
Buffalo Meter Co, 303 Washington st, Buffalo
Builders Iron Foundry, Providence, R I
Hersey Mfg Co, Boston, Mass
Neptune Meter Co, 253 Broadway, New York
Pittsburg Meter Co, East Pittsburg, Pa
Thomson Meter Co, 59 Washington st, Brooklyn, N Y
Union Water Meter Co, Worcester, Mass
Worthington, Henry R, Brooklyn, N Y

Mining Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Diamond Rock Drill Co, 95 Liberty st N Y
Blanton E A, Jr, The Bourse, Philadelphia
Bradley Pulverizer Co, 92 State st, Boston, Mass
Bucyrus Co, S. Milwaukee, Wis
Fairbanks, Morse & Co, Chicago
General Electric Co, Schenectady, N Y
Jeffrey Mfg. Co, Columbus, O
Lidgerwood Mfg Co, 96 Liberty st, N Y
Marion Steam Shovel Co, Marion, Ohio
Rand Drill Co, 128 Broadway, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Vulcan Iron Works, Wilkesbarre, Pa

Mortar Mixers.
Drake, C T, 40 W Jackson Boulevard, Chicago
Fisher & Saxton Co, 125 G st, N E, Washington

Motors (Electric). (see Dynamos.)

Non-Conducting Covering.
U S Mineral Wool Co, 143 Liberty st, New York

Nut Locks.
National Elastic Nut Co, Milwaukee, Wis

Oil Burners.
Hammel, C A, 120 Fifth st, Los Angeles, Cal

Oil Cups.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Oil Mill Machinery.
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio

Oil Pumps.
Sterrett Pump Co, 69 E 6th st, St. Paul

Oilless Bearings.
No Am Metaline Co, 6 West ave, Long Island City, N Y

Ore Handling Machinery.
(see Coal and Ore Handling Machinery.)

Packing.
Detroit Leather Specialty Co, 900 Michigan av, Detro
Robertson, Jas L, & Sons, 192 Fulton st, New York

Painting Machines (Pneumatic).
Hook, F E, Hudson, Mich
Macleod & Co. Walter, Cincinnati, O

Paint Pigment.
Internat'l Acheson Graphite Co, Niagara Falls, N Y

Paints.
Carbolineum Wood Pres Co, 13 Park Row, N Y
Clifton Paint Co, 69 Cortlandt st, N Y
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos, Crucible Co, Jersey City, N Y
Goheen Mfg Co, Canton, Ohio
Heath & Milligan Mfg Co, Chicago
Hook, F E, Hudson, Mich
Michigan Paint Co, 65 Woodland ave, Cleveland, O
National Paint Works, Williamsport, Pa
Rinald Bros, 1142 N Hancock st, Philadelphia
Sherwin-Williams Co, Cleveland, O
Sicilian Asphalt Paving Co, Times bldg, New York
Standard Paint Co, 103 William st, New York
Toch Bros, New York

Paint (Cold Water).
Bird & Co, J A & W, 10 Well st, Boston

Patent Attorneys.
Hill, Thos A, 261 Broadway, New York
Straley, Hasbrouck & Schloeder, 257 Broadway, N Y

Patterns (Wood).
Balkwill Pattern Works, 970 Hamilton st, Cleveland

Pattern Letters.
Butler, A G, 284 Pearl st, New York

Paving (Bituminous-Macadam).
Warren Bros Co, 93 Federal st, Boston

Paving Blocks (Stone).
Leopold, J, & Co, 18 Broadway, New York
(See also Stone.)

Paving Brick (see Brick).

Perforated Metals.
Harrington & King Perforating Co, Chicago, Ill

Pile Driving Machinery.
American Hoist & Derrick Co, St. Paul, Minn
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee Wis
Contractors' Plant Mfg Co, Buffalo, N Y
Lidgerwood Mfg Co, 96 Liberty st, N Y
Moundy, J S, Newark, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago, Ill

Pile Hammers.
Vulcan Iron Works, Chicago, Ill

Piling.
American Creosote Works, Ltd, New Orleans, La
Atlantic Creosot. & Wood Pres. Co, 10 Bridge st, N Y
Eppinger & Russell Co, 66 Broad st, New York
Meredith J P, Memphis, Tenn
New Orleans Wood Preserving Works, New Orleans
Norfolk Creosoting Co, Norfolk, Va

Pipe (Cast Iron).
Builders Iron Foundry, Providence, R I
Byers, John F, Machine Co, Ravenna, Ohio
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Dimmick Pipe Co, Birmingham, Ala
Dimmick, J K, & Co, 1949-51 Drexel bldg, Phila
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Fox, John, & Co, 253 Broadway, New York
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Utica, N Y
Reading Foundry Co, Ltd, Reading, Pa
Snow, T W, 360 Dearborn st, Chicago, Ill
U S Cast Iron Pipe & Fdry Co, 217 La Salle st, Chicago
Warren Foundry & Machine Co, 160 Broadway, N Y
Wood, R D, & Co, Philadelphia, Pa

Pipe (Culvert). See Pipe, Vitrified Clay.

Pipe (Lead).
Millar, Chas, & Son Co, Utica, N Y

Pipe (Riveted Steel).
Columbiana Boiler Co, Columbiana, O
Gillespie, T A, Co, Pittsburg, Pa
Keeler, E, Co, Williamsport, Pa
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa
Means & Fulton Iron Works, Birmingham, Ala
Pelton Water Wheel Co, 134 Main st, San Francisco
Scaife, Wm B, & Sons Co, Pittsburg, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Warren City Tank & Boiler Works, Warren, O
Welgele Riveted Steel Pipe Works, Denver, Colo

Pipe (Spiral Riveted).
Am Spiral Pipe Works, 64-66 Wabash ave, Chicago

Pipe (Vitrified Clay).
American Sewer Pipe Co, Pittsburg, Pa
Blackmer & Post Pipe Co, St Louis, Mo
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Evens & Howard Fire Brick Co, St Louis, Mo
Illinois Mfg Co, Macomb, Ill
Jackson, John H, Albany, N Y
Millar, Chas, & Son Co, Utica, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th st, N Y
Robinson Bros & Co, Akron, O
Syracuse Stoneware Co, Syracuse, N Y

Pipe (Wooden).
American District Steam Co, Lockport, N Y

Pipe (Wrought Iron).
Crane Co, Chicago, Ill
Fox, John & Co, 253 Broadway, New York
National Tube Co, Pittsburg
Pittsburg Pipe & Iron Co, Allegheny, Pa
California Redwood Pipe Co, Los Angeles

Pipe Casing.
U S Mineral Wool Co, 143 Liberty st, New York

Pipe Cutting and Threading Machines.
Saunder's, D, Sons, Yonkers, N Y

Pipe Fittings and Flanges.
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Latrobe Steel Co, Girard bldg, Philadelphia
National Tube Co, Pittsburg
Thompson, J, & Co, Van Horn & Sophia sts, Phila, Pa
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Joint (High Pressure).
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Jointers.
Watkins, Thos, Johnstown, Pa

Pipe Laying (Submarine).
Falcon, Jos G, 1110 Ayers Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich
Low Wrecking & Diving Co, 2 Coenties Slip, N Y

Pipe Line Supplies.
Ogden, J Edward Co, 147 Cedar st, New York

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ADVERTISERS' CLASSIFIED DIRECTORY.

Pipe Tapping Machines (see Tapping Machines)

Plaster.
Rock Plaster Co, 11 Broadway, N Y

Plows (see Scrapers and Plows).

Plumbers' Supplies.
Campbell, J G, Brass Works, Cascade st, Erie, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Miliar, Chas, & Son Co, Utica, N Y

Pneumatic Tools.
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Columbus Pneumatic Tool Co, Columbus, Ohio
Helwig Mfg Co, St Paul, Minn
Philadelphia Pneumatic Tool Co, Philadelphia
Slocomb, F F, & Co, Wilmington, Del
(see also Riveting Machines)

Poles (Wooden)
(see Piling.)

Portable Light (see Light, Contractors').

Portable Tracks.
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Power Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Power Transmission (Electric).
General Electric Co, Schenectady, N Y
Leffel, Jas, & Co, Springfield, O
Pelton Water Wheel Co, 134 Main st, San Francisco
Westinghouse Electric & Mfg Co, Pittsburg

Power Transmission (Rope).
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Case Mfg Co, Columbus, O
Cresson, Geo V, Co, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Phila

Press (Artificial Stone).
Palmer, Noyes F, 150 Snediker ave Brooklyn, N Y

Pressure Gages (Recording)
Bristol Co, Waterbury, Conn

Pressure Regulators
d'Estè, Julian, Co, 15 Canal st, Boston
Foster Engineering Co, Newark, N J
Union Water Meter Co, Worcester, Mass

Pulleys.
Case Mfg Co, Columbus, O
Dodge Mfg Co, Mishawaka, Indiana

Pulverizers (Ore and Cement).
Allis-Chalmers Co, Home Ins bldg, Chicago
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark J C, Box 525, Atlanta, Ga
Cresson, Geo V, Co, Philadelphia
Kent Mill Co, 170 Broadway, New York
Newell Mfg Co, 149 Broadway, New York
Smidth, F L, & Co, 66 Maiden lane, New York
West Pulverizing Machine Co, Jersey City, N J

Pumps and Pumping Machinery.
Allis-Chalmer Co, Home Ins bldg, Chicago
American Well Works, Aurora, Ill
Barr Pumping Engine Co, Philadelphia
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Bonnot Co, Canton, Ohio
Cameron, A S, Steam Pump Works, New York
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Cook Well Co, St Louis
d'Auria Pumping Engine Co, 941 Drexel bldg, Phila
Davidson, M T, 52 Keap st, Brooklyn, N Y
Dean Bros' Steam Pump Works, Indianapolis, Ind
Deane Steam Pump Co, Holyoke, Mass
Deming Co, Salem, Ohio
Downie Pump Co, Downieville, Pa
Edwards, Jos, & Co, 414 Water st, New York
Epping Carpenter Co, Pittsburg
Fairbanks, Morse & Co, Chicago
Flint & Walling Mfg Co, Kendallville, Ind
Goulds Mfg Co, Seneca Falls N Y
Guild & Garrison, So 10th st, Brooklyn, N Y
Hill Machine Co, Anderson, Ind
Heisler Pumping Engine Co, Erie, Pa
Knowles Steam Pump Works, 81 Liberty st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati, O
Lake City Engineering Co, Erie, Pa
Lawrence Machine Co, Lawrence, Mass
McGowan, John H, Co, Cincinnati, Ohio
Norwalk Iron Works Co, South Norwalk, Conn
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Quimby, Wm E, 141 Broadway, N Y
Roots, P H & F M, Co, Connersville, Ind
Scranton Steam Pump Co, 151 Franklin ave, Scranton
Snow Steam Pump Works, 120 Liberty st, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio
Toomey, Frank, 177 N 3d st, Philadelphia
U S Wind Engine & Pump Co, Batavia, Ill
Wood, P K, 309 No Main st, Los Angeles, Cal
Wood, R D, & Co, Philadelphia
Worthington, Henry R, Brooklyn, N Y

Pumps (Air Lift).
Bacon Air Lift Co, 100 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
Pneumatic Engineering Co, 128 Broadway, N Y

Pumps (Artesian Well).
Davidson, M T, 141 Broadway, New York
Downie Pump Co, Downieville, Pa
Wood, P K, 309 No Main st, Los Angeles, Cal

Pumps (Centrifugal).
Baldwinsville (N Y) Centrifugal Pump Works
Bucyrus Co, South Milwaukee, Wis
Edwards, Jos, & Co, 414 Water st, New York
Erie Pump & Engine Co, Erie, Pa
Kingsford Foundry & Machine Works, Oswego, N Y
Lake City Engineering Co, Erie, Pa
Lawrence Machine Co, Lawrence, Mass
Morris Machine Works, Baldwinsville, N Y
Temple Pump Co, 15th Place, Chicago
Wood, R D, & Co, Philadelphia

Pumps (Diaphragm).
Boston & Lockport Block Co, 160 Commercial st, Boston
Edson Mfg Co, 255 Atlantic ave, Boston

Pumps (Electric).
Davidson, M T, 141 Broadway, New York
Deming Co, Salem, Ohio
Goulds Mfg Co, Seneca Falls, N Y
Quimby, Wm. E, 141 Broadway, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Pumps (House Service).
Quimby, Wm E, 141 Broadway, New York

Pumps (Mining)
Davidson, M T, 141 Broadway, New York
Goulds Mfg Co, Seneca Falls, N Y
Pneumatic Engineering Co, 128 Broadway, N Y
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Snow Steam Pump Works, 120 Liberty st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, P K, 309 No Main st, Los Angeles, Cal

Punching Tools.
Pels & Co, Henry, 66-68 Broad st, New York

Pyrometers.
Bristol Co, Waterbury, Conn

Quarrying Machinery.
Flory, S, Mfg Co, Bangor, Pa
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, New York
Rand Drill Co, 128 Broadway, New York
Sullivan Machinery Co, 135 Adams st, Chicago
Tyrone Foundry & Machine Co, Tyrone, Pa

Rack Railways.
Hildenbrand, Wm, 1 Broadway, New York

Rail Fastenings.
Continuous Rail Joint Co of America, Newark, N J
National Elastic Nut Co, Milwaukee
N Y Rail Insulation & Equip Co, 300 Market st, Newark
Weber Ry Joint Mfg Co, Cotton Exch bldg, N Y

Rail Joints.
Bonzano Rail Joint Co, 22 South 15th st, Philadelphia
Continuous Rail Joint Co of America, Newark, N J
McConway & Torley Co, Pittsburg, Pa
Weber Ry Joint Mfg Co, Cotton Exch bldg, N Y

Rails (Relaying).
Donaldson & Newton, 421 Chestnut st, Philadelphia
Grant & Harper Machy Co, Park Row bldg, New York
Hyde Bros, 362 Lewis bldg, Pittsburg
Johnson, Chas F, 908 Ellicott square, Buffalo
Robinson & Orr, 419 Wood st, Pittsburg
Tallon, C J, 308 Market st, San Francisco

Rails (Steel).
Baumgarten & Bro, A F, Pittsburg, Pa
Buffalo Steel Co, Tonawanda, N Y
General Supply & Const'n Co, 8-10 Bridge st, N Y
Koppel, Arthur, 68 Broad st, New York
Pennsylvania Steel Co, Steelton, Pa

Railway Equipment (Dealers).
Apex Equipment Co, 11 Broadway, New York
Crane, A M, & Co, Rookery, Chicago
Fitz-Hugh & Co, Monadnock bldg, Chicago
Low, Edgar S, Co, Empire bldg, Pittsburg
Males Co, Ætna bldg, Cincinnati
Pease Car & Loco Works, 277 Dearborn st, Chicago
Schoonmaker, A G, Co, 126 Liberty st, New York
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia
Watson, Benjamin, 66 Beaver st, New York

Railway Signals (Pneumatic)
Pneumatic Signal Co, Broad-Exchange bldg, N Y

Railway Ties.
American Creosote Works, Ltd, New Orleans La
New Orleans Wood Preserving Works, New Orleans
Vanderbilt & Hopkins, 136 Liberty st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Railway Track Specialties.
Diamond State Steel Co, Wilmington, De
N Y Switch & Crossing Co, Hoboken, N J
Railroad Supply Co, Bedford bldg, Chicago
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Railways (Industrial).
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Riveting Machines.
Albree, Chester H, 14-30 Market st, Allegheny, Pa
Allen, John F, 370 Gerard ave, New York
General Pneumatic Tool Co, Montour Falls, N Y
Manning, Maxwell & Moore, 85 Liberty st, New York
Rand Drill Co, 128 Broadway, New York
Wood, R D, & Co, 400 Chestnut st, Philadelphia Pa
(see also Pneumatic Tools.)

Road Rollers and Machinery.
Acme Road Machinery Co, Frankfort, N Y
Austin Mfg Co, F C, Harvey, Ill
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Erie Machine Shops, Erie, Pa
Goods Roads Machinery Co, Kennett Square, Pa
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Heisler, Chas L, Erie, Pa
Huber Mfg Co, Marion, Ohio
Iroquois Iron Works, 178 Walden ave, Buffalo, N Y
Kelly-Springfield Road Roller Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich
Scholl, Julian, & Co, 126 Liberty st, New York
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Rock and Ore Crushers.
Acme Road Machinery Co, Frankfort, N Y
Allis-Chalmers Co Home Ins bldg, Chicago
Austin Mfg Co, F C, Harvey, Ill
Aultman Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Climax Road Machine Co, Marathon, N Y
Cresson Co, Geo V, Philadelphia
Farrel Foundry & Machine Co, 26 Cortlandt st, N Y
Good Roads Machinery Co, Kennett Square, Pa
Scholl, Julian, & Co, 126 Liberty st, New York
Smidth, F L, & Co, 66 Maiden lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Tyrone Foundry & Machine Co, Tyrone, Pa
Western Wheeled Scraper Co, Aurora, Ill

Rock Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Davis Calyx Drill Co, 128 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
McKiernan Drill Co, 170 Liberty st, N Y
Rand Drill Co, 128 Broadway, New York
Rogers, John M, Gloucester City, N J
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Wood Drill Works, 30 Dale ave, Paterson, N J

Rolling Doors, Partitions, etc. (Steel)
Kinnear Mfg Co, Columbus, Ohio
Wilson, J G, 3 W 29th St, New York

Roofing.
Standard Paint Co, 103 William st, New York

Roofing (Corrugated).
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Scaife, W B, & Sons Co, Pittsburg

Rope (Manila).
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Smith, S Morgan, Co, York, Pa

Scales (Weighing).
Fairbanks, Morse & Co, Chicago
Richardson Scale Co, 13 Park Row, New York

Schools (Correspondence).
Am. School at Armour Inst of Tech, Chicago
International Correspondence Schools, Scranton, Pa
Penn. Corres. Schools, Hamilton bldg, Pittsburg
(For Directory of Engineering Schools see p. 4.)

Scrapers and Plows.
Austin Mfg Co, Manhattan bldg, Chicago
Contractors' Plant Mfg Co, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Good Roads Machinery Co, Kennett Square, Pa
Shuart Scraper Co, Oberlin, O
Smith & Sons Mfg Co, Kansas City, Mo
Syracuse Chilled Plow Co, Syracuse, N Y
Western Wheeled Scraper Co, Aurora, Ill

Screens (Stone and Sand).
Allis-Chalmers Co, Home Ins bldg, Chicago
Aultman Co, Canton, O
Climax Road Machine Co, Marathon, N Y
Harrington & King Perforating Co, Chicago, Ill
Taylor Iron & Steel Co, High Bridge, N J

Screens (Water-Works).
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Seamless Drawn Tanks and Tubes.
National Tube Co, Pittsburg

Separators (Oil and Steam).
Harrison Safety Boiler Wks, 1168 N 17th st, Phila
Robertson, Jas L, & Sons, 192 Fulton st, New York

Sewage Disposal.
Cameron Septic Tank Co Monadnock block, Chicago

Sewer Braces.
Dunn Mfg Co, Pittsburg, Pa
Potter Mfg Co, 3010 N W ave, Indianapolis, Ind

Sewer and Street Castings.
Permanent Mfg Co, Am Trust Bldg, Cleveland, O
Sessions Foundry Co, Bristol, Conn
(see also Castings, Iron.)

Sewer Pipe (see Pipe, Vitrified)

Shafting.
Case Mfg Co, Columbus, O
Cresson, Geo V, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Poole, Robt, & Son Co, Baltimore, Md

Sheet Iron Work.
Am Sheet Steel Co, Battery Park bldg, New York
Petroleum Iron Works Co, Washington, Pa
Scaife, Wm B, & Sons Co, Pittsburg

Sheet Steel.
Am Sheet Steel Co, Battery Park bldg, New York
American Steel & Wire Co, New York & Chicago

Shutters (Fire Proof).
Kinnear Mfg Co, Columbus, Ohio

Skylights.
National Skylight & Const'n Co, 120 Liberty st, N Y
Pienty, Josephus, Jersey City, N J
Valle & Young, Baltimore, Md

Sluice Gates.
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Smoke Stacks (see Stand-Pipes and Tanks).

Speed Governers.
Foster Engineering Co, Newark, N J

Stamp Mills.
Allis-Chalmers Co, Home Ins bldg, Chicago

Stand-Pipes and Tanks.
Caldwell, W E, Co, 200 East Main st, Louisville, Ky
Chicago Bridge & Iron Co, Chicago
Columbiana Boiler Co, Columbiana, O
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Co, East Boston, Mass
Keeler, E, Co, Williamsport, Pa
King Bridge Co, Cleveland, O
Means & Fulton Iron Works, Birmingham, Ala
Meehan Boiler & Construction Co, Lowelville, O
North Penn Iron Co, 3d and Sedgley ave, Phila
Petroleum Iron Works Co, Washington, Pa
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, Wm B, & Sons Co, Pittsburg
Sharon Boiler Works, Sharon, Pa
Smith, Theo, & Sons Co, Jersey City, N J
Snow, T W, 360 Dearborn st, Chicago
Strutners-Wells Co, Warren, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Tippett & Wood, Phillipsburg, N J
U S Wind Engine & Pump Co, Batavia, Ill
Walsh, W J, Holyoke, Mass
Warren City Tank & Boiler Works, Warren, O
Wood, R D & Co, Philadelphia, Pa

Steam Shovels.
Austin, Mfg Co, Manhattan bldg, Chicago
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee, Wis
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Marion Steam Shovel Co, Marion, O
Mead, John A, & Co, 7 Broadway, New York
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, Boston, Mass
Thew Automatic Shovel Co, Lorain, O
Toledo Foundry & Machine Co, Toledo, O
Vulcan Iron Works Co, Toledo

Steam Specialties.
American District Steam Co, Lockport, N Y
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
d'Estè, Julian, Co, 15 Canal st, Boston
Harrison Safety Boiler Wks, 1168 N 17th st, Phila
Lunkenheimer Co, Cincinnati, O
Manning, Maxwell & Moore, 85 Liberty st, New York
Robertson, Jas L, & Sons, 192 Fulton st, New York
Union Steam Spec. Co, 151 Franklin ave, Scranton, Pa
(see also Separators, Oil and Steam.)

Steam Traps.
American Blower Co, Detroit, Mich
Buffalo Forge Co, Buffalo, N Y
Crane Co, Chicago, Ill
d'Estè, Julian, Co, 15 Canal st, Boston
Sturtevant, B F, Co, Boston, Mass

Steel Clips.
Streeter, H A 35 Indiana st, Chicago

Steel Flanges (Weldless).
Latrobe Steel Co, Girard bldg, Philadelphia

Steel Ties.
Koppel, Arthur, 68 Broad st, New York

Stone.
Bound Brook (N J) Crushed Stone Co
Leopold, J, & Co, 18 Broadway, New York
Thiel, August, Guttenberg, N J
Tomkins, Calvin, 120 Liberty st, New York

Street Railway Supplies.
Brill, J G, Co, Philadelphia, Pa

Street Sprinklers and Sweepers
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Edson Mfg Co, 255 Atlantic ave, Boston
Good Roads Machinery Co Kennett Square, Pa

Structural Steel and Iron Work.
Berlin Construction Co, Berlin, Conn
Brooks, T H, & Co, Cleveland, O
Eichleay, John, Jr, Co, Pittsburg
General Supply & Const'n Co, 8-10 Bridge st, N Y
Kratzer, W N, & Co, 3218 Smallman st, Pittsburg
Link Belt Engineering Co, Nicetown, Phila
Means & Fulton Iron Works, Birmingham, Ala
National Skylight & Const'n Co, 120 Liberty st, N Y
N J Foundry & Machine Co, 9 Murray st, N Y
North Penn Iron Co, 3d and Sedgley ave, Phila
Pedrick, E K, Co, 120 Liberty st, New York
Schreiber, L, & Sons Co, Cincinnati, O
Sharon Boiler Works, Sharon, Pa
Snare & Triest, 39 Cortlandt st, New York
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Streeter, H A, 35 Indiana st, Chicago
Tippett & Wood, Phillipsburg, N J
Walton Iron Co, Cincinnati
(see also Bridges and Buildings.)

Stump Pulling Machine.
Milne Mfg Co, 884 Eighth st, Monmouth, Ill

Submarine Armor (see Diving Apparatus).

Tanks.
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Hodge Boiler Works, East Boston, Mass
Pacific Tank Co, Los Angeles, Cal
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, W B, & Sons, Pittsburg
Steel Storage Elevator & Const'n Co, Buffalo, N Y
Warren City Tank & Boiler Works, Warren, O
(see also Stand Pipes and Tanks.)

Tapes (Steel). See Measuring Tapes.

Tapping Machines (Pipe).
Smith, Anthony P, Mfg Co, Newark, N J

Tents.
Murray & Co, 329 S Canal st, Chicago

Test Borings (see Artesian Wells).

Testing Laboratories (see Laboratories).

Testing Machines.
Falkenau-Sinclair Machine Co, 109 N 22 st, Phila
Riehle Bros Test & Mach Co, 1424 N 9th st, Phila

Thermometers (Recording).
Bristol Co Waterbury, Conn

Tie Plates.
Diamond State Steel Co, Wilmington, Del
Railroad Supply Co, Bedford bldg, Chicago

Ties
Koppel, Arthur, 68 Broad st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Time and Cost Keeping.
Industrial Time & Cost Keep. System, Bantam, Conn

Time Detectors.
Am Watchmen's Time Detector Co, 234 B'way, N Y
Imhauser, E, & Co, 206 Broadway, New York

Tracing Cloth.
Aloe, A S, Co, 414 North Broadway, St Louis
Favor, Ruhl & Co, 54 Park Place, N Y
Hardtmuth, L & C, 49 Barclay st, New York
(see also Instruments, Engineering, etc.)

Transformers.
General Electric Co, Schenectady, N Y

Trench Machines.
Carson Trench Machine Co, Boston, Mass
Potter Mfg Co, 3010 N W ave Indianapolis, Ind

Tubing (Flexible Metallic).
Moore, Chas C, & Co, 32 First st, San Francisco

Turbines.
Camden Water-Wheel Wks, Camden, New York
Dayton Globe Iron Works Co, 7 Ludlow st, Dayton, O
Leffel, Jas, & Co, Springfield, O
Poole, Robert, & Son Co, Baltimore, Md
Risdon-Alcott Turbine Co, Mt Holly, N J
Smith, S Morgan Co, York, Pa
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, R D, & Co, Philadelphia, Pa

Turnbuckles.
Cleveland City Forge & Iron Co, Cleveland
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Turntables.
American Bridge Co, New York
Boston Bridge Works, 47 Winter st, Boston, Mass
Chicago Bridge & Iron Co, Chicago
Columbia Bridge Co, Pittsburg
Fort Pitt Bridge Works, Pittsburg, Pa
Hunt, C W, Co, Richm'd Terrace, W N Brighton, N Y
King Bridge Co, Cleveland, O
Koppel, Arthur, 68 Broad st, New York
McClintic-Marshall Construction Co, Pottstown, Pa
Mo Valley Bridge & Iron Wks, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, O
Passaic Steel Co, Paterson, N J
Philadelphia Bridge Works, Pottstown, Pa
Phoenix Bridge Co, 1321 Arch st, Philadelphia
Virginia Bridge & Iron Co, Roanoke, Va
Wonham-Magor Eng. Wks, 29 Broadway, New York

Valve Boxes.
Cayuta Wheel & Foundry Co, Sayre, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Drummond, M J, & Co, 192 Broadway, N Y

Valves.
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Darling Pump & Mfg Co, Box E, Williamsport, Pa
(see also Hydrants and Valves.)

Valves (Gas).
Campbell, J B, Brass Works, Cascade st, Erie, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Ludlow Valve Mfg Co, Troy, N Y
Roots, P H & F M, Co, Cornersville, Ind

Valves (Gate).
Cayuta Wheel & Foundry Co, Sayre, Pa
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Crane Co, Chicago, Ill
Miliar, Chas, & Son Co, Utica, N Y
Walworth Mfg Co, Boston, Mass
Wood, R D, & Co, Philadelphia, Pa

Valves (Pressure Regulating).
Ross Valve Co, Troy, N Y
(see also Pressure Regulators.)

Valves (Steam).
Cayuta Wheel & Foundry Co, Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Ludlow Valve Mfg Co, Troy, N Y
Lukenheimer Co, Cincinnati, O

Valves (Stop).
Foster Engineering Co, Newark, N J
Reading Foundry Co, Ltd, Reading, Pa
Thompson, J, & Co, Philadelphia

Varnish and Colors.
Sherwin-Williams Co, Cleveland, O
(see also Paints.)

Vault Lights.
Brooks, T H, Cleveland, Ohio
Tucker & Vinton, 156 Fifth ave, New York

Ventilators.
Buffalo Forge Co, Buffalo, N Y
Merchant & Co, Inc, Philadelphia, Pa

Vises (Parallel).
Merrill Bros, 467 Kent ave, Brooklyn

Wagons and Carts.
Auburn Wagon Co, Martinsburg, W. Va
Austin, F C, Mfg Co, Harvey, Ill
Climax Road Machine Co, Marathon, N Y
Columbia Wagon Co., Columbia, Pa.
Good Roads Machinery Co, Kennett Square, Pa
Port Huron Engine Co, Port Huron, Mich
U S Sanitary Co, Washington, D C
Watson Wagon Co, Canastota, N Y
Western Wheeled Scraper Co, Aurora, Ill

Water Motors.
Backus Water Motor Co, Newark, N J

Water Softening Plants.
Industrial Water Co, 126 Liberty st, New York
Kennicott Water Soft Co, 406 Great North. bldg, Chic
N Y Continental Jewell Filtration Co, 15 Broad st, NY
Patterson, D W, Harrison bldg, Philadelphia, Pa
Pittsburg Filter Mfg Co, Pittsburg

Water Storage Systems.
Acme Water Stor & Const'n Co, Park Row bldg, N Y

Water Wheel Governors.
(see Governors, Water-Wheel.)

Water Wheels.
Cassel Auto Water Motor Co, Seattle, Wash
Doble, Abner, Co, Fremont & Howard, San Francisco
Pelton Water Wheel Co, 134 Main st, San Francisco
(see also Turbines.)

Water-Works Tools and Supplies.
Flint & Walling Mfg Co, Kendallville, Ind
Smith, A P, Mfg Co Newark, N J

Well Drilling Machinery.
American Well Works, Aurora, Ill
Cook Well Co, St Louis, Mo
Star Drilling Machine Co, 104 Fulton st, New York
Williams Bros, Ithaca, N Y

Wharf and Pier Builders.
Atlantic, Gulf & Pacific Co, 13-21 Park Row, N Y
McMullen, Arthur, & Co, 13-21 Park Row, New York
O'Rourke, John F, Park Row bldg, N Y
Phoenix Bridge Co, Phoenixville, Pa
San Francisco Bridge Co, 220 Market st, San Francisco

Wheelbarrows.
Cockburn Barrow & Machine Co, Jersey City, N J
Syracuse Chilled Plow Co, Syracuse, N Y
Steubner, G L, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill

Whistles.
Crosby Steam Gage & Valve Co, Boston
Lunkenheimer Co, Cincinnati, O

Windmills.
Flint & Walling Mfg Co, Kendallville, Ind
Temple Pump Co, 15th Place, Chicago
U S Wind Engine & Pump Co, Batavia, Ill

Wire, Wire Rope and Cables.
American Steel & Wire Co, New York & Chicago
Broderick & Bascom Rope Co, St Louis
Leschen, A, & Sons Rope Co, St Louis
Macomber & Whyte Rope Co, 21 S Canal st, Chicago
Roebling's, John A, Sons Co, Trenton, N J
Trenton Iron Co, Trenton, N J
Williamsport Wire Rope Co, Williamsport, Pa

Wire Drawing Machinery.
Turner, Vaughn & Taylor, Cuyahoga Falls, Ohio

Wire Fence (see Fencing).

Wood Preserving (see Creosoting).

Wrenches.
Keystone Drop Forge Wks, 20th & Clearfield sts, Phila

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